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Special Articles This Month

South Australian News and Notes

Goulburn Valley News and Notes

Science in Horticulture

Citrus Juice Industry

Tasmanian News and Notes

Vegetable Culture

Potato Crop Competitions

Small Fruit Culture

Canned and Dried Fruits

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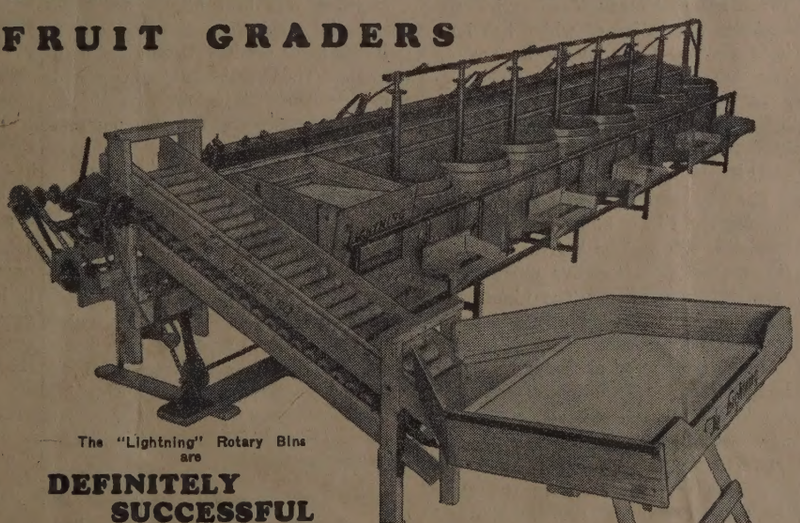

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SMALL FRUIT CULTURE

Valuable Varieties Developed in U.S.A.

Red, Purple and Black Raspberries :: Currants :: Gooseberry :: Seedless Grapes :: Strawberries.

THE BREEDING of new varieties is of importance, as improved varieties are constantly being developed. Much valuable work is being done in this connection in Australia as well as in other parts of the world.

Before his retirement from the Geneva (New York) Agriculturlal Expriment Station, Dr. U. P. Hedrick, by his researches, performed services of great value to the fruit industry. Since his retirement Dr. Hedrick has continued his interesting writings, making known the latest information on the subject of fruit varieties.

In the following notes on new developments in small fruits, Dr. Hedrick points out that those mentioned are mainly from the Geneva Experimental Station, the varieties having been distributed by the New York Fruit Testing Association.

Many other new and valuable varieties have been developed elsewhere but Dr. Hedrick has chosen only to mention those with which he is personally very familiar.

Red Raspberries,: The Geneva station has fruited thousands of seedlings in the last 40 years. During this long period perhaps a dozen have been named. Five of these are still being offered for sale, every one of which is worth brief discussion.

The best known of the five is Newburgh, now a standard market variety; in keeping qualities, it has no superior. The fruits are large, firm, do not crumble; and the plants are vigorous, very productive, and are rarely attacked by mosaic. The berries ripen early.

Taylor is better than Newburgh for home gardens, the fruits being larger, handsomer and of better quality. The plants are just as vigorous and productive, but are a little more subject to mosaic. This is a mid-season variety.

Marcy, introduced in 1936, produces the most beautiful berries I have ever seen, they are as good as any I have ever tasted. The fruits are long-conic, firm and medium red. Plants vigorous, productive, tall and straight. Mid-season.

Milton is the latest of the station red Raspberries, worth planting because it is freest from the dreaded mosaic. In other respects it is much like Taylor, especially in fruit.

Indian Summer is the best of all ever-bearing red Raspberries. The berries are large and of very good quality, but are rather soft and crumble somewhat, so that they do not ship well.

I am not particularly fond of **Black Raspberries**, but, in common with most people, want them a few times during the Summer. Bristol and Naples will supply this fruit through a rather long season. Bristol is the earlier of the two, ripening a week earlier than Naples. The berries of both are large, glossy black, and excellent in quality. The plants are about all that could be desired; those of Naples, in particular, are little subject to anthracnose.

Purple Raspberries are hybrids between red and black Raspberries, the best representative of which has long been the old Columbian, a variety very susceptible to mosaic. The Geneva station has bred two of these hybrids in every way superior to Columbian, especially so in resistance to mosaic.

The two are Sodus and Marion and the former, to my mind, is a most remarkable fruit. The berries are very large, firm, an attractive purple, and excellent in quality. The plants are vigorous, productive, hardy and nearly free from mosaic. Marion is said to be quite as good as Sodus but later in ripening.

I regret to say that there are no new **Blackberries**, to me the best of all the bramble fruits. Nor are there new **Dewberries**. Here in the East we must continue to grow the old Eldorado Blackberry and the Lucretia Dewberry, both relics of past generations.

Neither has the New York station bred new **Currants**, although Red Lake, a new variety from another source, is a better variety than any other kind grown in America.

One splendid new **Gooseberry** has been introduced. It is Fredonia, very like the English Gooseberries. Fredonia has dark red berries, which are delectable dessert fruits and good, as well, for all culinary purposes.

The Geneva station has bred more than 30,000 seedling Grapes, of which 24 have been named. Two of them are seedless.

The following new **Strawberries** are selected from several thousand seedlings which have fruited in the last quarter century.

Catskill is the largest and handsomest Strawberry I have ever seen and is as good in quality as its appearance suggests. The plants are vigorous and productive. This fruit, as a seedling, was given an award of merit by the Massachusetts Horticultural Society. It ripens in mid-season.

Clermont is second best after Catskill. This mid-season variety is valuable for both home and market. Culver is much like the two preceding varieties but is hardly as attractive in appearance or flavour. It is recommended for preserving.

Dresden was first offered in 1939. Its special merits are earliness and a uniform good product through a long season. The berries are large and very handsome in colour and shape. It is also noteworthy for vigorous and productive plants.

NOTE ON CARE OF GRAFTS.

It is advisable at this time to make sure that where grafting has been done, the ties have been loosened or cut as growth commences. This is, of course, essential so that sap movement and growth of the graft will not be restricted.

Some support should be given to the shoots where rapid growth has been made, otherwise there is a chance that they may be blown off. In fact, many failures have resulted from neglect of this most important point. A strongly growing shoot which has not yet become firmly attached to the stock should always have support.

AFTER-CARE OF REWORKED TREES.

BESIDES THE GROWTH from the inserted buds or scions on reworked fruit trees, many growths will start from the stock below these points. On nursery stock these growths are generally better rubbed off on sight, but on established trees that have been worked over it is far better to allow some of the growths from below the inserted buds or grafts to remain, write H. Broadfoot and E. C. Whittaker, of the N.S.W. Dept. of Agric.

Some of the shoots from below the buds or grafts will show great vigour, and are better rubbed off or they will be a constant menace. The weaker shoots are better allowed to remain, but should be inspected occasionally, and if any grow strongly they should be pinched or slashed back to prevent them sapping the growth from the inserted buds or grafts.

The advantage of leaving some growth on the stumps of worked-over trees below the buds or grafts is threefold. In the first place, these growths provide some foliage to assist in the elaboration of the raw sap. Secondly, the growth on the stumps shades the bark from the sun and promotes sap circulation, which prevents the sun from scalding the bark and thus establishing entry points for wood-rot fungi. Thirdly, the extra growth assists in protecting the tender new shoots from the inserted buds or grafts from breakages by wind.

Sometimes when working over established trees some limbs are left unworked; where this has been done it is often necessary to check their growth during the following growing season, or they too greatly will sap the growth from the buds or grafts.

BOREDOM ALLEVIATED.

To meet the needs of prisoners of war who have escaped into Switzerland, every effort, the Secretary of State for War told the House of Commons, was being made by the Senior British Officer, in consultation with the Swiss authorities. Recreational facilities were being provided, and arrangements were made for courses of study by Red Cross.

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August 5th, 1944

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War Agricultural Committees

Report on Victorian Activities.

Valuable Co-operation by Growers.

Use of Prisoner of War Labour.

THE SECOND HARVEST since the inauguration of the War Agricultural Committees has now been successfully completed. Though many new difficulties were encountered, the experience gained during the 1942-43 harvest was of great assistance in helping the Committees to overcome similar difficulties arising during the past season, states the Central Executive of the War Agric. Committee in the Vic. Jour. Agric.

The Tomato harvest, with its consequent labour difficulties, next faced the Committees. In the Goulburn Valley, where the major labour problems occurred last harvest, the lack of labour for picking the fruit was overcome by the use of Italian prisoners of war in addition to the normal labour available. These prisoners proved to be a very suitable type of labour. During the season they picked approximately 500,000 cases of fruit, averaging about 12 cases per man per day of five hours each. This was equivalent to over one-third of the total crop harvested in the Goulburn Valley.

At Bendigo also the yield of the Tomato crop has been very satisfactory. Sufficient Australian pickers were available to cope with the crop. The allocation of this harvesting labour was undertaken by the District War Agricultural Committees. A large proportion of this labour force was drawn from the Pool of Rural Labour, which consists of farmers who can spare a short period each year away from their farms helping in urgent seasonal work elsewhere. Growers of Tomatoes and dried and canning fruits have expressed their appreciation of the work done by these farmers.

The production of Tomatoes for processing purposes this year totalled 3,400,000 cases, which exceeds that of 1942-43 by 45 per cent.

At Shepparton the allocation of the labour for the fruit crop was undertaken by the Fruit Growers' Association, but elsewhere the Committees carried out this task. Fruit pickers in the Goulburn Valley this year included 300 volunteers from the city and larger towns, 400 farmers from the Pool of Rural Labour, 400 18-19-year-old soldiers, and 330 schoolboys.

The dried vine fruits harvest in the Mildura and Swan Hill-Nyah-Woorinen districts was completed without major difficulty. Production was very satisfactory, being estimated as approximately 16 per cent. greater than that of last year. The Growers' Associations arranged the allocation of pickers in close co-operation with the District War Agricultural Committees. Pickers were accommodated on individual blocks, where the facilities provided were generally of a high standard. Two thousand eight hundred men and women assisted in the Grape picking in the Mildura district and 775 in the Swan Hill-Nyah-Woorinen district.

There has been a considerable increase in the production of vegetables in Gippsland. To assist farmers in overcoming their labour difficulties, a prisoner of war hostel has been established in East Gippsland, and the labour thus made available has enabled production to be extended into areas where vegetables were not previously grown.

The successful gathering of this year's harvest has been due in a large measure to the co-operation between farmers, their Associations, and the Committees. It is the objective of the War Agricultural Committees to foster this co-operation, and it is to the farmers of this State that the Committees look for help.

PRIMARY PRODUCERS' COUNCIL.

Australian Organisation Formed.

The annual Conference of the Primary Producers' Council of Australia was recently held at Sydney.

Representatives attended from the Australian Dairy Farmers' Federation, Graziers' Federal Council, Australian Wool Producers' Federation and the Australian Wheat Growers' Federation.

It was stated that the aim was to eventually represent all the primary producers of Australia: that when this was achieved the primary producers would be able to speak with one voice on any national or international matter which concerned them.

Each group of producers should organise in its own sphere, thus member organisations would handle domestic matters without interference from the Council as a whole.

The Council affirmed its belief that a profitable and stable price for pri-

mary products depended on international and Empire planning and a correctly balanced national economy.

The Secretary is Mr. H. C. Clark, 2 Spring-street, Sydney.

QUEENSLAND.

ROYAL COMMISSION'S REPORT.

The report of the Royal Commission into the production distribution and marketing of fruit and vegetables has caused considerable concern among producers, as the interim report states that growers have been receiving excessive prices; also that agents' commissions should be reduced and that retailers' margins are too high. The report points out that where the public is paying 5/- for fruit the growers' return is 2/6½.

On the other hand, growers point out that their average pre-war returns were not unduly remunerative and that normal consideration must be taken into account if encouragement is to be given for continued production under post-war conditions.

:: :: ::

The Premier of Queensland (Mr. Cooper) states that no action will be considered by the Government until the final report of the Enquiry Commission became available.

AGRICULTURAL MACHINERY.

Group Plan Proposal.

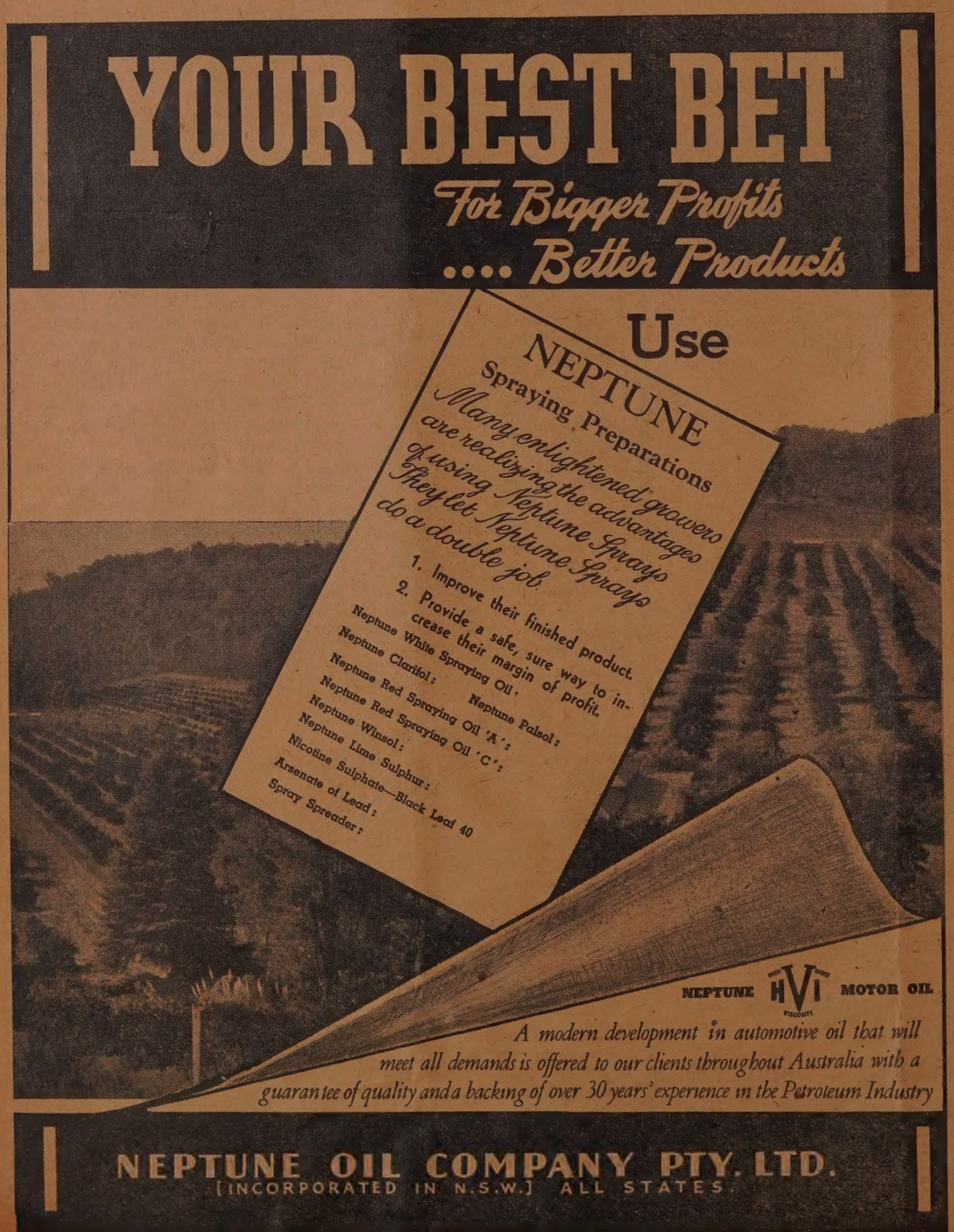
New agricultural machinery specially designed for high priority vegetable and Tomato crops, has recently been demonstrated in vegetable growing districts, and is expected to be available to growers in the near future. The Victorian Minister of Agriculture, Mr. Martin, has been discussing with farmers means of financing the purchase of such machinery, and particularly proposals for the formation of groups of farmers for the co-operative purchase of modern machines and equipment.

Mr. Martin states that the general opinion of those with whom he had discussed these questions was that, because of the complex nature of much of the machinery, it could best be handled by district contractors, who would soon gain the necessary experience to operate the machinery in the most efficient manner.

When, therefore, groups of farmers in any district were desirous of hiring machinery under the Government plan, the Minister strongly urged them to seek the co-operation of a district contractor who could operate the machinery in their interest. He was certain that in this way the farmers would be best served, and not only would the machinery be operated more efficiently, but it would also serve a larger number of producers.

VICTORIA MARKET INSPECTOR RETIRES.

Mr. W. Swift, Inspector at the Queen Victoria Market, will reach the compulsory retiring age of 65 years on the 20th August next. Mr. Swift has been at the market forty-two years, and is very well known to the many growers who use the market.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SCIONS FOR GRAFTING ON FRUIT TREES.

GROWERS who contemplate reworking obsolete varieties of fruit trees to more profitable ones, or who desire to provide for better pollination in their trees, must consider the provision of suitable scions.

Mr. F. J. Greatorex, Orchard Supervisor of the Victorian Department of Agriculture, advocates the collection of scions for grafting deciduous trees during the dormant pruning season—June, July and August—but the longer the scions remain on the trees, the better, provided they are taken before growth commences.

For pole-grafting, select thin, but well matured, annual growth, and for other types, slightly thicker wood. When gathered, scions should be stood up in the soil, about two inches deep, close, but not too close together, in a cool moist place. Too much moisture will cause rotting. Scions can also be kept in a cool store, but should be inspected occasionally as they may wither slightly during October. If withering does occur, the scions should be taken out and stood in a few inches of water until they revive.

Scions that have been heeled in for a long period may start to grow; if so, pull them up and leave them out of the ground for a few days in a shady spot. This will retard growth and they can then be placed in the soil again.

Scions picked up from the ground after pruning are often slightly withered, but can be revived by placing them in water for a few days.

Scions completely buried in the ground may start to grow early, or may become water-logged, and both these conditions would cause failures in subsequent grafting.

Grafting wood should be taken only from trees that are **true to type**, and variety, free from disease and of good bearing strain

QUEENSLAND.

Cool Storage.

It was decided at the June meeting of the Deciduous Sectional Group Committee of the C.O.D., Brisbane, that the recommendations of the consulting engineers be accepted as a basis for the establishment at Applethorpe of the first cool store.

Ceiling Prices.

It was decided to advise the Prime Minister that the Committee was entirely dissatisfied with its relationship with the Price Fixing Dept., due to its lack of knowledge of local district conditions and refusal to accept expert advice.

PAYMENTS RECEIVED WITHOUT SENDERS' NAMES OR ADDRESSES.

We have received the following remittances from subscribers, but the name of the remitter was not included:—

Postal note, 6/-, postmark on envelope, Bentleigh, Vic.

Postal note, 7/6, postmark on envelope, Castle Forbes Bay, Tasmania.

Would the senders kindly communicate with Editor, "Fruit World," Box 1944, G.P.O. Melbourne, Victoria.

Seasonable Orchard Notes

No Black Spot in Western Australia

THERE HAVE BEEN OUTBREAKS BUT ALL HAVE BEEN ERADICATED.

CO-OPERATIVE EFFORT PRAISED.

TOTAL PROHIBITION AGAINST IMPORTATIONS OF APPLES INTO WESTERN AUSTRALIA.

MUCH SATISFACTION is expressed in Western Australia in that the black spot disease (Venturia inaequalis) is non-existent there.

Outbreaks have been reported from time to time but by vigorous combined efforts these were eradicated.

In the Albany and Manjimup districts late in 1939 and early in 1940, there was an outbreak which caused much concern, but the Minister for Agriculture (Mr. Wise) has announced that it is believed this to be eradicated—due to the fine spirit of co-operation shown by growers and the control measures applied by officers of the Department of Agric.

Eradication Methods.

Briefly reviewing the history of the outbreaks, Mr. Wise said that at the end of the 1939-40 growing season 21 orchards in the Manjimup district and 3 in the Kalgan River district were infected with Apple scab (Black Spot). Eradication measures applied, in addition to the destruction of infected fruit and leaves, included the complete burial of all Apple leaves by one-way ploughing and hand-digging where necessary during August and September of each year, and sprayings with Bordeaux mixture at various strengths at the stages of spur burst, pinking, petal fall and leaf fall. Growers were only permitted shallowly to cultivate their orchards during the period October to early December to prevent the danger of bringing leaves to the surface of the ground. If infected leaves were brought to the surface re-infection could easily follow.

Very good results were achieved after the first year's treatments as only three orchards of those previously infected revealed traces of the disease during 1941. Since then the eradication measures had been continued although no further signs of the disease had been found despite many close and careful inspections.

Use of Flame Throwers.

Special difficulties had to be overcome as they occurred. An example of this was the effect of the exceptionally dry conditions experienced during 1940 which caused large numbers of Apple leaves to fall prematurely. These leaves were blown by winds and congregated along fences, ditches and against logs and bracken fern cover where it was impossible either to plough or dig them under. To meet the position two flame-throwers were secured and in a relatively short space of time these leaves, which could have caused re-infection, were destroyed.

Compensation to Growers.

Although the losses incurred by growers in eradicating Apple scab were considerable, some measure of assistance was provided by the W.A. Fruitgrowers' Association and the Fruitgrowing Industry Trust Fund Committee. Growers were recouped the costs of the spraying materials used as well as a proportion ranging from one-quarter to one-third of the estimated losses in fruit values caused by spray russeting.

The State committee of the Apple and Pear Marketing Board had also assisted to a considerable degree by the imposition of quarantine measures and had eased the responsibilities of the growers concerned with crops.

Apple Imports Prohibited.

Finally, Mr. Wise added, it should be remembered that existing legislation totally prohibited the entry of Apples and other pome fruits into Western Australia. The public should co-operate whole-heartedly in the observance of this law, in order to safeguard the State from the danger of similar outbreaks in future.

WESTERN AUSTRALIA.

HORTICULTURAL CONDITIONS in Western Australia are set out by Mr. H. R. Powell, Supt. of Hort., in a report dated 30th June, as follows:—

Rainfall recordings during the month were below average. In the Donnybrook area 517 points were recorded, and a low recording of 1½ inches was made at Albany. The weather has been conspicuous by the number of cold, frosty nights—these have had some effect on retarding the growth of cover crops.

The harvesting of Apples is almost completed. The four dehydrators are still working. Apples will also be required for juicing purposes at Donnybrook. Deliveries, however, are being made in the main from supplies in growers' sheds.

Apple and Pear growers, under the most adverse circumstances, have packed a record quantity of fruit. At the same time, the factories were kept continuously supplied.

Navel Oranges have been marketed in greater quantities, and top prices are being received for good quality fruit. Owing to the dry season the fruit is below average size.

Pruning has commenced, and doubt is expressed, owing to the shortage of labour, whether or not the majority of the orchards will be pruned. Early varieties of Peaches, such as Dunhelm, are now at the bud-burst stage.

The incidence of diseases and pests has not been serious during the month. Fruit Fly infestation has been at a minimum, and citrus fruits are practically free from strikes.

Generally, cover crops have made fairly good growth, particularly those planted in March.

PATENTS

George A. U'Ren

Patent Attorney

"OSBORNE HOUSE,"

397-399 Little Collins Street (adjoining Queen St.), MELBOURNE, C.1.

VICTORIA.

Seasonal Horticultural Conditions and Coming Crop Prospects.

Pruning is in progress on all deciduous orchards, states the Vic. Dept. of Agric. **Fruit bud development on most Apple varieties is light but Pears show promise of good crops.** English and Japanese Plums, Peaches and Cherries are all showing good crop prospects. Many orchards have been left unploughed and where nitrate of soda was applied last Spring, an excellent growth of herbage has been obtained. Few green crops have been planted in southern Victoria. Woolly aphis is visible on many Apple trees. To control the pest, a spray of red oil (one in fifteen) should be applied.

Citrus trees are showing the effect of the dry weather and light waterings may be required for trees and green crops. The fruit is of good size and quality. Valencias are carrying heavy crops although fruit is small in the Swan Hill area. A very heavy crop of Lemons is expected in the Swan Hill district.

PHOSPHATE SUPPLIES.

The Australian Agricultural Council has expressed pleasure at the improvement in the superphosphate position, adding that the additional amount to be made available would have a beneficial effect on rural production.

It also emphasised the necessity for adequate supplies of ammonium sulphate to be made, and its satisfaction with the development of potash deposits in Western Australia, while both that State and South Australia are producing certain quantities of phosphate rock capable of manufacture into superphosphate.

The council believes that sulphate of amomnia should be made available in substantially increased quantities, and that it should replace nitrate of soda as far as possible, either by oversea imports or the operation of synthetic plants in Australia. Regarding the development of Western Australian alunite deposits, the council considers that the general supply position for all States during 1944 is reasonably assured.

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MANURE VALUES.

The main plant foods supplied by animal manures are nitrogen, potash and phosphoric acid. Horse manure, unmixed with straw or bedding material, is richer and more readily decomposed than cow manure, and is always valuable for winter use. Cow and pig manures are heavier and slower in decomposing.

Poultry manure is the most concentrated of all animal manures, containing more than twice as much nitrogen and phosphate as horse or cow manure, and about the same amount of potash. Its nitrogen occurs in a readily available form, and it can be used where a quick-acting or forcing nitrogenous manure is wanted.

The amount of plant foods in animal manures is much less than that in artificial fertilisers, and for best results both manure and fertilisers should be used.

PHOSPHORUS IN SOIL IS MADE AVAILABLE BY LIMING.

SEVERAL WORKERS HAVE SHOWN that the amount of phosphorus available to plants is increased after the application of lime or limestone to the soil. This benefit from lime has been found to be appreciable even when superphosphate has been used as fertilizer. Superphosphate contains calcium (the active element in lime, limestone, and chalk) and this calcium is largely in soluble form; so also is the phosphate in super.

The old theory was that the value of superphosphate as a source of phosphate for plants was due to the fact that the phosphate had been converted into a soluble form which the plants could take up readily. To add lime with the super would offset this benefit, and was discouraged.

We now know that when phosphate in water-soluble form is added to soil, most of the phosphate combines with soil constituents to become at least temporarily insoluble in water. This immobilization or "fixing" of phosphorus by the soil, which results in the phosphate becoming unavailable or only slowly available to plants, partly arises from the formation of phosphates of iron and aluminium, which are practically useless to plants. It has been suggested that lime somehow decomposes the iron and aluminium phosphates, though it was not clear how that could occur.

Two Indian workers, M. O. Ghani and S. A. Aleem, of Dacca University, have shown that when slaked lime, chalk, magnesium oxide or gypsum was added to portions of an acid soil kept under laboratory conditions, the amount of phosphorus that could be supposed to be available to plants increased.

The effect of the added materials in increasing the amount of available phosphorus persisted for some weeks.

There was practically no effect upon the insoluble phosphates, and it appears that the increased amount of available phosphate had been principally derived from the organic phosphorus such as is present in the tissues of fungi and remains of higher plants. This in turn suggests that the effect of the added materials was a stimulation of the activities of the soil microbes, and particularly the bacteria. In presence of lime, chalk, etc., bacteria were able to complete the decomposition of organic matter and to bring its locked-up phosphorus into a form which plants can assimilate.—Extract from "Monthly Science News."

SPRAYS FOR FRUIT TREES.

WINTER IS A GOOD TIME to spray deciduous fruit trees for the control of insect pests, as sprays can be used now at strengths which would seriously damage the tree at other periods of the year.

The Biological Branch of the Victorian Department of Agriculture issues the following timely advice on winter control measures for several varieties of insect pests:

The **Bryobia Mite** lays eggs of a dull red colour on the wood, particularly at the junctions of branches and on fruit spurs. Apply a single dormant application of either red or pale oil, 1 in 20, or lime sulphur, 1 in 10, or a combination spray consisting of 2 gallons of pale or winter white oil and 5 gallons of lime sulphur.

The **Green Peach Aphis** and **Cherry Aphis** overwinter as shiny black eggs laid on or near the buds of Peaches and Nectarines, or of Cherries respectively. Both can be controlled by a spray of tar distillate, 1 in 35, or a 2.5 per cent. spray of a proprietary oil emulsion containing D.N.C.

The **San Jose Scale** in Victoria infests Apple, Pear and Peach trees. The scales are small and grey, and if plentiful give the tree a generally greyish appearance. Any of the sprays used for Bryobia Mite are effective for San Jose Scale.

Young Pear leaves sometimes show pale, greenish blisters, which later turn brown. These blisters are caused by the **Pear Leaf Blister Mite**, a very tiny mite which over-winters in the bud scales. As this pest feeds within the leaf tissues during the spring and summer, it can be controlled only during the winter by the use of lime sulphur 1 in 10.

Spraying should be efficient. If an effective control is not obtained in the winter, particularly of the Green Peach Aphis, it will not be possible to retrieve the position even with repeated spring and summer applications.

TWO POPULAR APPLE VARIETIES.

Two varieties which seem likely to find increased popularity in Canada are Starking and Golden Delicious. The latter is described in "Horticulture" as being an excellent baking Apple with an unusual flavour, and is also a heavy bearer in well-kept orchards. It is essentially a dessert Apple.

at large in Orchard

Insect pests do not, unfortunately, ease off because of the war—unattacked, they will quickly sabotage your livelihood. Notwithstanding your manpower, supplies and marketing problems, you cannot afford to neglect your trees—your greatest asset. Safeguard your future with an adequate spray programme against orchard insect pests. The use of Gargoyle RED Spraying Oil in the dormant season is a sure safeguard of proven ability and a definite benefit to tree health. Order your supplies NOW, of .....

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Tasmanian News and Notes

BUDS INDICATE LIGHTER APPLE CROP NEXT SEASON, PEARS NORMAL — INCREASE IN GREEN MANURING — PEST AND DISEASE CONTROL METHODS — DEVELOPMENT OF BY-PRODUCTS FACTORIES — POSTWAR RECONSTRUCTION NEEDS.

(By Our Correspondent.)

WORK IS PROGRESSING reasonably well in the Tamar Valley orchards, the labour position having been relieved a little by the employment of P.O.W.'s, who are proving satisfactory in the majority of cases. Many of them express a wish to return after the war. The weather has also remained favourable for outside work, which has enabled pruning to proceed satisfactorily, also ploughing on the flatter areas, where the risk of erosion is slight.

The indications for next year's crop appear to be for a lighter crop of Apples, with Pears about up to last year, judging by bud formation.

In the southern districts I notice a lot of orchards are being ploughed where there are green crops planted for manure. **The practice of green manuring is becoming more general** all over the south, and I notice some very good crops getting ready for turning under, the wet autumn having favoured their growth.

Pruning is well under way in most orchards in spite of the severe weather that still continues in the south. It has been so far one of the coldest winters on record.

Oil spraying will start soon on those orchards where the owner considers it desirable. It is usual to delay oiling as late as is safe, as it is considered the pests are more vulnerable just before hatching. Of course, where tar distillates and carbolic emulsions are used, they must be put on earlier in the winter. The woolly aphis parasite seems to be fairly well established in the State, and I also see a lot of Cabbage Butterfly grubs killed by its parasite.

Bud development is patchy in several varieties of Apples, but Pears look up to the average. After last season's record crop we must expect a falling off for 1945 harvest.

Timber for boxes is an ever increasing problem, and has become really serious, practically all payable areas in get-atable positions have been cut out, and there is nothing to replace them coming on.

Both Jones and Co.'s and Rosella factories are now producing **pasteurised juice for the forces**, and available supplies of Apples are being reduced rapidly.

Now that the factories are in working order, it is probable that all of the 1945 crop will be required for various products.

The Port Huon Co.'s factory is working full time on Apple sauce for the American Army. This firm's fruit juices are finding a ready sale, and are very palatable and refreshing. The Black Currant juice is in demand for the army, and the demand exceeds the supply.

The cost of production is still rising as wages are increasing, and the analysis of manure is comparatively low and price high, and all spare parts and replacements are excessive in price. I had to pay 4/6 for a ½ inch iron shackle—prewar price, 9d.

Post-war reconstruction is occupying a lot of attention of late, as the war position looks so much more favourable. It will take some time to remedy wartime neglect, both on private property and public works. The deep water wharf at Port Huon is in a bad state of repair, and should be put in order ready for a resumption of trade when the war ends. The Hobart wharves are over-taxed, and in a chronic state of congestion.

Red Spider Control.

The question was asked Mr. G. W. Gayford at a recent conference of orchardists, whether combining oil with greentip Bordeaux was effective in controlling mites. In Tasmania a few are usually hatched out at this time, and are killed by spray. Judging by results, I should say a fair proportion of advanced eggs are also killed. Personally, I find that no matter what winter treatment is adopted, it must be followed up later to insure a reasonable control during late summer. I have used flour paste in summer with good results, and no detriment to the trees, as is sometimes the case with summer oil (after sulphur especially) or lime sulphur. Nicotine at present is too scarce and dear.

In a recent run round the country I see the berry fruit plantations are being well looked after, and cultivation well advanced. No doubt the brisk demand has had a stimulating effect.

Eggs are still in abnormally short supply, and it will be a month or two yet before the decrease in hens caused by the limit to 20 laying hens being imposed (without registering) is remedied by the increase to 40, now allowed. Had the exemption been higher to begin with, there would not have been a shortage, but the average small producers objects to so much control, and would rather stop producing than register and supply the Egg Floor, which seems to be expensive and inefficient; the chilled eggs they supply are often unusable, and cost double what the preserved eggs used to do. Butter production is on the decrease also in Tasmania for similar reasons, too much regulation and control.

The extra powers referendum is causing some interest, and rural labour supporters are not making a party question of it.

It would be a help to producers, both primary and secondary, if the Federal Government would follow New Zealand's lead with regard to taxation on deferred maintenance expenditure.

The State Fruit Board is urging that depreciation be allowed on orchards that have passed their prime by the Taxation Department.

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UNPRUNED APPLE TREES.

A PRUNING EXPERIMENT has been conducted with Apple trees on a long range basis at the New Jersey (U.S.A.) Agricultural Experiment Station: a report just to hand states that the 24 trees which were left unpruned for seventeen years have lost fewer branches from breakage than pruned trees. Also they have produced more Apples than the pruned trees.

The explanation is that the more numerous branches help to support and protect each other. A tree very freely thinned of branches is made more susceptible to breakage. Not at the main crotches, but at points some distance outward. When such a branch is lost the number of fruiting branches is definitely reduced and, likewise, the yield. Dr. Blake states that it is actually more important to prune Apple trees according to bearing surface than framework style.

The true framework branches of a tree bear few Apples. Fruit bearing is the function of the smaller branches and twigs. Even so, bearing trees are often pruned nearly naked of small fruiting growths.

Agricultural machinery plants in Australia were diverted to munitions production of agricultural machinery year many of the plants reverted to production in 1941-42. Late last at Commonwealth direction.

In New Zealand the Home Guard is maintained at about 100,000 men.

Australia and New Zealand are supplying 90 per cent. of the food required by the United States forces in this area, only 10 per cent. having to be shipped from the U.S.A.

Two men were hotly discussing the merits of a book. Finally one of them, himself an author, said to the other: "Now, Fred, you can't appreciate it. You never wrote a book yourself."

"No," retorted his friend, "and I never laid an egg, but I'm a better judge of an omelet than any hen in the country."

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N.S.W Apple and Pear Growers' Association

CEILING PRICES — TRIPLICATE DOCKET SYSTEM — HAIL INSURANCE — COSTS OF PRODUCTION.

SUCCESSFUL ANNUAL CONFERENCE.

THE ANNUAL CONFERENCE of the N.S.W Apple and Pear Growers' Association was held at Sydney on June 29. Delegates were present from Orange, Bathurst, Batlow, Griffith, Dural, Young, Penrose, Leeton and the P.D.S.; also Messrs. H. W. Broadfoot and E. M. Pauley (Dept. of Agric.), and Mr. Frank Moore, Victoria.

The Conference was officially opened by Mr. Broadfoot.

Annual Report.

In presenting the annual report, the Chairman, Mr. W. B. Pascoe, said that while the present fixed prices did not conform to the Association ideas of fairness nor nearly approach market values for Apples and Pears in N.S.W. they were considerably above what Canberra authorities had planned. The original suggestion by the Prices Branch that 4d. per lb. be the retail price for the major part of the year and 6d. per lb. for the remaining three or four months would have returned the grower 10/- and 15/- per case respectively. Continued efforts had been made and though the ceilings were 19/- for Apples and 20/- for Pears (June 30) these were not sufficiently high.

A.W.U. Award. Although a compulsory conference had been held, no new award had been made. The court had yet to determine if it had power to increase wages in view of wage pegging regulations.

Acquisition Claims. This matter had been postponed owing to the death of one of the claimants.

Special thanks are due to Mr. H. V. Smith, to the Secretary, Mr B. Rosdall, and to the Leeton Co-operative Cannery.

The Chairman urged Apple and Pear growers to strengthen their organization.

The financial statement showed a credit of £136.

Price Ceilings: On the motion of Messrs. H. V. Smith and A. E. Herring, it was resolved that the price ceilings recently announced were entirely unsatisfactory, and that the submissions of the Association to the Prices Commissioner were the lowest the industry should accept. It was further decided to ask that a grower representative be associated with the Prices Branch to confer on price ceilings.

Cost of Production: Mr. Pauley, Economic Division, Dept. of Agric., told of the methods adopted in arriving at costs of production at Batlow.

It was decided to request similar research in other districts. A basis for arriving at production costs was adopted.

Docket System: On the motion of Messrs. H. V. Smith and S. A. Stanford, it was decided that strenuous efforts be made to have the triplicate docket system established as early as possible.

Hail Insurance: Mr. Cooke (Govment Insurance Office) stated his office could not undertake the full responsibility for Hail Insurance claims: the only hope was for Government legislation and the setting aside of funds to meet large claims.

Other resolutions stressed the need for increased horticultural research, necessity for sufficient paper for wrapping Apples and Pears, and rural electrification.

Root Stocks: Mr. Broadfoot gave a valued address on the subject of root stocks and was cordially thanked.

Office Bearers.

Office-bearers were elected:—Chairman, Mr. W. B. Pascoe (Orange). Vice-Chairman: Mr. H. V. Smith (Batlow). Executive: Messrs. A. G. Enticnap (Leeton), A. A. Wilkinson (Uralla), E. J. Sell (Young), E. Ray (Bathurst), M. Rose (Penrose), Messrs. Herring and Cox were appointed associate members to the Executive.

Ready for Immediate Use!

Cuprox Spray Saves Manpower

Today when there is an acute manpower shortage and food production is Australia's major contribution to an Allied victory, the labour-saving feature of Cuprox alone is of vital importance.

CUPROX is always ready for immediate use — the powder needs simply to be added to water and stirred, when a suitable suspension is provided. The mixed spray will keep indefinitely, and after long standing, needs only to be stirred again. CUPROX, redispersible copper oxychloride, is an Australian-made copper fungicidal spray which replaces Bordeaux and Burgundy mixtures, but is in no way based on Bordeaux. It has distinct advantages over ordinary copper sprays, doing away with the labour of dissolving and mixing blue-stone and lime or soda, and preventing the risk of plant injury from imperfectly made spray.

CUPROX wets and spreads well and has good sticking qualities, the spray residues being highly resistant to rain. It is compatible with other sprays and can be used safely with lead arsenate, nicotine, oil sprays, sulphur and lime sulphur. This permits of the use of combination sprays, thus reducing the total number and cost of spray applications. Distributed by Ramsay & Treganowan Ltd., 469 Latrobe Street, Melbourne, Victoria.

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CUPROX
FUNGICIDAL SPRAY

THE VEGETABLE GARDEN.

Late blight may appear in potato crops, particularly if conditions are humid and the nights cool (states the N.S.W. Dept. of Agric.). This disease causes heavy losses in potato yields, and can be controlled by spraying the plants with Bordeaux mixture 1:1:10 at intervals of ten days.

Chives are a perennial vegetable, and the cloves of plants in established beds should be divided every two to three years. April is a suitable month for carrying out this operation.

Kohl rabi should be grown rapidly to get good results. When the roots start to swell, regular side dressings of nitrate of soda or sulphate of ammonia should be given at intervals of three weeks, using ½ oz. to each square yard of soil. The roots should be harvested when 2½ to 3 inches in diameter, as after this stage they become woody.

Inter-row cultivation should be shallow to break the surface crust, destroy weeds and mix fertilizer with the soil. If it is too deep it damages surface roots.

Artificial fertilizers should be stored in a dry place and when in bags should not be placed on a concrete floor.

NEW PEACHES

Supplies of yellow centred Peach trees recently imported from America by Mr. W. Young, of Kelvin Orchard, are very limited and intending planters are advised to place their orders at once.

C. J. GOODMAN, Nurseryman, Bairnsdale, has the

SOLE RIGHT

of securing buds of these varieties from Mr. Young's Kelvin Orchard, so be sure to obtain trees which are true to name.

For further particulars write to—

C. J. Goodman

NURSERYMAN,
BAIRNSDALE, VICTORIA.

Goulburn Valley News and Notes

(By Our Correspondent.)

NORTHERN VICTORIA FRUITGROWERS' ASSOCIATION — CANNERY MANPOWER PROBLEMS — ARDMONA GROWERS TO CO-OPERATIVELY MARKET PEARS.

(By Our Correspondent.)

Annual Meeting of Northern Victoria Fruit Growers' Association.

At the annual meeting of the Northern Victoria Fruit Growers' Association on June 30th, Mr. W. Young, of Ardmona, was re-elected President. Other officers elected were—Vice-President, Mr. N. W. Fairless; Secretary and Treasurer, Mr. S. P. Cornish; Executive Committee—Messrs. N. W. Fairless, W. F. Cooper and S. P. Cornish; Export Pear Committee—Messrs. J. Sinclair, R. Roberts, O. Young and F. Clayton.

Mr. S. P. Cornish, in his annual report stated inadequate skilled labour in canneries was mainly responsible for failure to attain the production target of over 3,000,000 cases of canned fruits.

General satisfaction was expressed concerning the supply of labour both in regard to quality and quantity for harvesting and, and it was stated that the appointment of labour allocation officers was a distinct success, which should be continued, but disappointment was expressed concerning the paucity of labour supplies for pruning and other winter operations.

Evidently those responsible for manpower do not yet realise that labour is required to produce the crop as well as to harvest it when it has been grown.

Fruit Industry Award.

The report also referred to the fruit industry award made by the Arbitration Court. Amazement was expressed that the court, in time of war, and when the industry is being asked to increase its output, and is unable to obtain sufficient labour to do so, should reduce the hours and so increase the almost unbearable difficulties of our members who have done a magnificent job in keeping up production to its present level. In wheatgrowing the hours are fixed at 48 per week, in dairying 56, in fruitgrowing 44 Why the difference? asks the report.

Canned Fruits.

The commencement of the canning season found canners in a similar position to the 1943 season, with no unsold stocks on hand, and with a pressing request by the Federal Government for maximum production. With heavy crop in view, the only difficulty to be overcome was sufficient manpower to handle the crop and pack it into cans.

Food control aimed high. The authorities required over 3,000,000 cases of canned fruits for services and civilians. Only once has the figure been reached by Australian canners, namely, in 1938, when approximately 400,000 cases of Apricots, 1,800,000 cases of Peaches, and 860,000 cases of Pears were packed.

Canners fell short of this figure this year by comparison — 70,000 cases Apricots, 420,000 cases of Peaches, and 260,000 cases Pears. Total, 750,000 cases.

It was considered that the lack of sufficient cool store space was a contributing factor in the sub target pack, but this, in the main, is incorrect.

Nearly all canners were processing for a much longer period than usual. Their plans could have coped with the fruit, if they had been able to work to capacity. The manpower available was not sufficiently skilled or adequate to fully utilise the available plant. In a few isolated instances, if local cool storage had been available, plants could have run longer, and the fruit could have been handled to a better advantage.

Compared to the previous season which was short in supply of fresh fruit, especially in Peaches, the canned fruit pack showed an increase of 225,000 cases. Apricots showed an increase of 112,000 cases, Peaches 219,000 cases, whilst Pears decreased 106,000 cases.

The detailed comparison with previous years is as follows:—

Apricots—			
1938	380,082	1942	181.893
1943	215,610	1944	327,946
Peaches—			
1938	1,790,742	1942	1,348,073
1943	1,158,341	1944	1,377,768
Pears—			
1938	860,104	1942	595,076
1943	708,603	1944	602,200

Totals, all Fruits—

1938	3,030,928
1942	2,125,402
1943	2,082,554
1944	2,307,914

With the large crop of fruit available to canners last season, produced through great difficulty by the growers in response to the appeal by the authorities for great production, it is regrettable that fruit was wasted because of the inability of the canners to process the crop. This, we believe, was not the fault of the canners, but was brought about solely, as previously pointed out, by the inadequate supply of labour.

We trust that both Food Control and Manpower will see to it that this bottleneck is eliminated next season.

To compensate in some measure for the increased costs of production, we were successful in obtaining an increase of 25/- per ton on canning Apricots, Peaches and Pears, also 25/- per ton on jam Apricots and Peaches, and £1 per ton on jam Plums and Quinces.

Late Pears and W.B.C. Pears for the Fresh Fruit Market.

Your executive again concluded arrangement with S. J. Perry & Co., of Shepparton, to buy and pack 90,000 cases of W.B.C. Pears. This quantity was not as great as that packed in the previous year, viz., 135,000, and the reduction in quantity packed was due solely to the loss by S. J. Perry & Co. of one-third of their cool store space, plus their inability to obtain sufficient experienced packers.

The price agreed upon was 5/6 per case, with a minimum size of 2¼ ins.

With regard to late Pears, there had already been contracted for under a five years' contract; but on the representation of your executive, Messrs. S. J. Perry & Co. agreed to the increase in prices as follows:—

Packhams, Josephines, and Winter Nelis, 6/6; Fancy grade, 5/6, and good grade up 6d. per case. Winter Cole, 5/-; fancy, 4/-; good grade, up 1/-; Doyenne du Comice, Buerre Bosc, Buerre D'Anjou, Buerre Hardy and Glou Morceau did not participate in any price rise.

In conclusion, the report stated:—"As the five years' contract has now been completed, your executive is at present negotiating a one-year contract at much higher prices than obtained previously, and we hope to have the information available for members at an early date."

ARDMONA GROWERS TO MARKET OWN PEARS.

Co-operative Scheme Trial.

Ardmona fruitgrowers have accepted a proposition from the directors of Ardmona Cannery for the packing and marketing of the late Pears. Negotiations had been in progress for the renewal, under amended conditions, of a contract with S. J. Perry & Co., of Shepparton.

Under the new arrangement it is proposed to market the late Pears through the Southern Victoria Pear Packing Co., which operates under the "Blue Moon Brand."

The headquarters of this organisation with which Ardmona growers will be associated on a co-operative basis are at Blackburn.

It is understood that girls are being trained as packers at Ardmona Fruits Products Co. at Mooroopna, and that a new cool store will be available by next season.

It is stated that growers' returns under the new venture will be based on realisations.

About 30,000 to 40,000 cases of late Pears are grown at Ardmona, but this figure is expected to be considerably increased in the near future.

NEW COOL STORE AT ARDMONA CANNERY.

Ardmona Fruit Products Co-operative Ltd. have let contracts for the building of another large cool store adjoining the present factory. Building operations are proceeding satisfactorily.

The Railway Department has already put down a spur line to serve the new cool stores, which will be of brick and concrete.

This new store will be of immense value to the cannery, as well as making provision for the cool storing of all the late Pears, which in future are to be handled and packed on a co-operative basis.

EXPERIMENTS RESUME AT RESEARCH ORCHARD.

Members of the Executive of the Northern Victoria Fruitgrowers' Association recently visited the Tatura Horticultural Research Station, where experimental orchard practice interrupted by the war is to be resumed.

Manurial and irrigation subjects are to be the first to be resumed.

FRUIT AND PRODUCE EXCHANGE
TURBOT STREET, BRISBANE.
Satisfaction Assured.

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BRISBANE

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Red Cross supplies patients in hospital and convalescent depots with cigarettes or tobacco each week. These men in a tented ward in New Guinea are receiving their weekly issue from the Red Cross Representative.

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Remember, the Wounded Can't Wait!
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PROCESSED FRUITS

VARIOUS PRODUCTS can be obtained from Apples.

Information from Canada is to the effect that Apple varieties tried at MacDonald College, McIntosh and Golden Russet gave much the best juice, followed by Northern Spy, Baldwin, Patten, Greening, Fameuse, Milwaukee and McMahon White, all of which gave fair to good quality juice.

Notes from Mr. R. J. Hinton and Mr. R. W. Arengo-Jones refer to the following:—

Dried Apples: Here the fruit is peeled and cored, bleached with SO_2, sliced or sectioned and dried so as to have a moisture content of not more than 25 per cent. **Canned Apples:** Fruit is peeled, cored and cut into quarters, one-sixths or eighths. The pieces, after soaking in salt brine, are blanched and packed tightly in cans, which are filled with water, exhausted, capped and sterilised. **Apple Sauce:** Fruit is peeled, cored, cooked, crushed or pulped and sieved. It is then sweetened and canned. **Apple Pie Filler** is sweetened Apple with the addition of starch to take up the free liquid. **Frozen Apples** are peeled, cored, sliced, bleached slightly in SO_2 or salt brine, packed into containers and held at 0 deg. F. They may alternatively be kept in SO_2 solution at 32-48 deg. F. **Apple butter** is of Apple, boiled Apple juice, sugar and spice, which is cooked, pulped and sieved. The product is of a butter consistency, and has a tart and spicy Apple flavour. **Apple Juice:** Three juice canneries are noted as operating in Ontario, three in Nova Scotia, and two or three in Brit. Columbia. **Cider:** To get the best results a certain proportion of the juice must come from cider Apples.

DRIED FRUITS.

The Board of Management of the A.D.F.A. is pressing the claim for increased manpower.

To combat the starling menace, plans are being made to import from America an aceptylene exploder.

Mr. R. H. Youdale (General Manager elect of the Overseas Farmers' Co-op. Federation Ltd.), speaking recently at Barmera, S. Aust., said that the consumption of dried vine fruits in England was increasing because of the knowledge of their high nutritive qualities.

Dried fruits distribution was administered by the British Ministry of Food, in conjunction with the co-operative Allied marketing decisions of the Hotspring (U.S.A.) Conference. These activities were the beginning of the fulfilment of the Atlantic Charter. Complete isolation was no longer possible. Co-operation between nations was necessary.

Some form of control with dried fruits would operate for at least two years after the war.

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Australian producers must maintain good quality and packing. Sultanas had proved satisfactory in the past, but improvements with Currants was necessary.

DRIED VINE FRUIT CROPS.

Estimated at 100,000 Tons.

Although the target for the Australian crop of dried vine fruits was set for about 90,000 tons, the 1944 harvest was expected to reach 100,000 tons. This was stated by Mr. H. D. Howie, O.B.E. (Chairman of the A.D.F.A.) at Renmark early in July.

A BLACKBERRY WITHOUT THORNS.

New Departure in Plant Breeding.

Merton Thornless Blackberry, which has just been released to the public by the John Innes Horticultural Institution, London, is something of a new departure in plant breeding. With each plant is provided a leaflet telling what it looks like, how it grows and is cultivated and, what is most remarkable, how it happened.

"Monthly Science News" (Eng.) states that Mr. M. B. Crane, who is in charge of the fruit-breeding work of the institution, produced it. His work began in 1912. His object was to turn a thornless but small-fruited sport of a wild English Blackberry (with the learned name of Rubus rusticanus inermis) into a large-fruited plant that would be worth growing.

When it was crossed with other Blackberries the seedlings were entirely sterile. The reason for this was not discovered until 1927, when a cytological colleague, C. D. Darlington, found that the thornless Blackberry had fewer chromosomes than the other species.

Fortunately, at the same time, one seedling arose by chance which had twice as many chromosomes as it should have had from its thornless mother. In consequence it was entirely fertile and nearly twice as vigorous—with fruits an inch across. Thornlessness, however, was recessive, and it was not until 1935 (in the fourth generation) that good thornless types were extracted from the derivatives. The best of these was Merton Thornless. The new plant is therefore an example, one of the first, of the application of combined cytological and genetic methods to plant breeding. Those who take it up will be able, with the account of its origin before them, to carry the breeding work further. They will be able to produce themselves the new thornless Blackberries of the future.

SOUTH AUSTRALIAN NEWS AND NOTES

Official Reports and Notes of the South Australian Fruitgrowers' and Market Gardeners' Association.

S.A. Fruitgrowers' and Market Gardeners' Association Inc.

A meeting of the executive committee was held on Friday, 28th July, 1944.

Mr. R. A. Cramond (Chairman) occupied the chair. Also present – Messrs. L. B. Pfeiffer, C. H. Ragless, C. L. Winser, G. H. Schultz, L. G. Pethick, L. J. Wicks, R. B. Pritchard, C. J. Pitt, H. N. Wicks, A. E. Brealey, J. B. Randell, W. H. Ind, O. Essalbach, W. Wye, H. B. Robson, W. J. Bishop, J. D. Yeatman, A. G. Strickland (Chief Horticulturist), Apology received from Mr. E. W. Mattner.

Special Expenses Fund: Mr. W. J. Bishop gave notice that he would move at the Annual General Meeting of the Association in September: "That a levy of 5/- per member be struck for the 1944/45 financial year to create a fund for meeting legal expenses of the Association."

Reserve Fund: The Secretary submitted draft letters drawn up by the Association's solicitor regarding the effect of price fixing and taxation on the industry. Resolved, that the letters be forwarded to the requisite authorities as considered advisable by the sub-committee appointed to handle this matter.

Banana Growers' Distributors Ltd.: Letter from the Manager (Mr. H. A. Stevenson) enclosing copy of Report of Royal Commission upon certain trading operations in connection with the sale or disposal of Apples and Pears on behalf of the Australian Apple and Pear Marketing Board. Received.

Annual Meeting: Mr. W. J. Bishop moved—"That for this year the procedure be as last year, namely:—10.30 a.m., Executive Committee meeting; 11 a.m., Annual Meeting of Shareholders of Fruitgrowers' and Market Gardeners' Society Ltd.; 2 p.m., Annual General Meeting of Association with a guest speaker. Seconded Mr. J. Turner. Carried.

Resolved, the Premier (Mr. T. Playford) be inivited to open the meeting at 2 p.m.

Guest Speaker: Mr. A. G. Strickland advised that Mr. W. Bankes Amery (British Ministry of Food), and Mr. J. F. Murphy (Commonwealth Food Controller) would be in Adelaide late in September to address the Agricultural Bureau Congress.

Resolved, that efforts be made to obtain these gentlemen as guest speakers at the Annual Meeting, and if arrangements can be made the date of the Annual Meeting be set to fit in with their visit to Adelaide, failing this, Dr. Coombes be invited to address the meeting.

Sectional and Branch Reports.

Fruitgrowers' Society: Mr. W. J. Bishop stated that the Society continued to make spectacular progress. To assist the acute bushel case position, the Society was arranging to import cases from an interstate source. The Society had started to receive factory citrus from growers, as per arrangement, but a hold-up in factory operations had caused confusion among growers; this, however, was not the fault of the Society.

Citrus Section: Mr. O. Essalbach reported that the citrus market was rather erratic, the market being over supplied at the present. He endorsed Mr. Bishop's remarks that the hold-up in factory supplies was due to the inability of factories to process Oranges, and in no way the result of the Society's operations.

In connection with factory deliveries, it was considered advisable for the mutual benefit of all concerned that in view of the scarceness of fruit from this year's crop that an independent inspector should be appointed at the Society's receiving depot. An inspection at the depot would obviate any complaints by growers at any later date.

Resolved, that steps be taken to ascertain if an independent inspector could be appointed.

Tomato Section: The Secretary reported that recent frosts had caused extensive damage in glasshouse Tomatoes, and the section was in contact with the Prices Branch regarding the matter.

Cudlee Creek Branch: Mr. R. B. Pritchard reported that shed stored fruit was practically disposed of. The cool store was full.

Paracombe Branch: Mr. A. E. Brealey reported that common store fruit was finished and supplies were now being drawn from cool store, which was full.

Onkaparinga Branch: Mr. L. B. Pfeiffer reported that the Annual General Meeting of the Branch would be held on 15th August, 1944, when the Premier would give an address.

Mr. C. J. Pitt reported that on Wednesday, 26th July, Mr. C. Kentish, the other delegate from South Australia on the Federal Potato Advisory Committee, was in Adelaide, and a meeting had been held with delegates from the Onkaparinga Branch to discuss Potato matters generally.

It was considered necessary that Potato growers in this State should be more closely associated, and he suggested that the Secretary and Mr. W. J. Bishop go to Mount Gambier to meet the South-East Potato Growers' Association to discuss affiliation or amalgamation.

Mr. Bishop considered the suggestion an excellent one, and suggested that Mr. L. B. Pfeiffer, the Chairman of the Onkaparinga Potato Growers' Branch, should also make the trip.

Mr. N. T. Hoggs moved—"That a delegation be sent to the South East as soon as it can be conveniently arranged to secure the active co-operation of South Eastern growers with this Association." Seconded Mr. E. Braendler. Carried.

Resolved, the Chairman, Messrs. W. J. Bishop, L. B. Pfeiffer, C. J. Pitt and the Secretary comprise the delegation.

Country Cool Stores Association: Mr. R. B. Pritchard advised that the Country Cool Stores Association had decided to affiliate with this Association.

POTATO CROP COMPETITION.

Lobethal (S. Aust.) Agricultural Bureau.

Carman, Katahdin and Delaware Varieties.

INTEREST IS MAINTAINED in the Potato crop competitions at Lobethal. S. Aust., which has been conducted on a two-year basis. The competitions were judged by Mr. J. A. Beare and E. Leishman (Sth. Aust. Dept. of Agric.).

The winning crop was Mr A. W. Paech's entry—96 pts. The yield was 18 tons 9 cwts. 90 lb. per acre, of which 95.6 per cent. was No. 1 grade, (the remainder being less than 3 oz. in weight). It was grown from Victorian-grown certified Carman seed, and was the only crop grown from undipped seed, which was free from scab; 8 cwt. of super was used and there were three irrigations.

Mr. W. D. Erdmann was second with 90 pts. Sth. Aust. Carman seed was used. Crop: 15 tons 3 cwt. 69 lb. per acre, of which 96.3 per cent. was No. 1 grade. The seed was dipped and was entirely free from scab.

Third prize went to Mr. J. P. Kerber with Katahdin variety: yield 18 tons 8 cwt. 101 lb., which scored 89½ points.

Mr. Kerber's Carman entry yielded 15 tons 7 cwts. 22 lb., of which 95.4 per cent. was No. 1 grade—89 pts.

Other competitors were Messrs. B. A. Mahlo, A. B. Klau, L. B. Pfeiffer, R. Lorke, W. Peacock, S. R. Buckley and C. Wuttke.

:: :: ::

Interesting features of this years' competition were the two Katahdin entries. Mr. Kerber's entry was marred by a high percentage of moth damage. Mr. Erdmann's entry was also satisfactory. This variety is particularly promising for early plantings.

The judges state that another important lesson was the value of the dipping the seed. Of the 14 entries, the seed was dipped in eight cases and not in the other six In the case of the undipped seed, the average loss from scab was 1 ton 2 cwt. per acre. No commercially significant scab was found in any of the eight crops grown from dipped seed

:: :: ::

Points on which the competition were judged were yield (35), Quality (20), Type and Purity (15), Freedom from disease and insects (15), Freedom from Weeds and Evenness (15).

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Definite Concessions offered to Shareholders.

A. STUART, Secretary,
F. & M.G. Society Ltd.

South Australian Fruit Marketing Association

A meeting of the Executive Committee of the above Association was held on Friday, 28th July, 1944, at 2 p.m.

Present—Messrs. A. O. Petersen, R. G. Hannaford, D. W. Hannaford, F. F. Redden, P. R. B. Searcy, M. G. Basey, R. O. Knappstein, R. B. Pritchard, A. G. Strickland, J. B. Randell, C. L. Winser, A. Brealey, S. M. James, L. G. Heading, H. N. Wicks, R. H. A. Lewis, G. S. Queale, L. J. Bishop and E. W. Mills, Secretary.

Apologies from Messrs. A. R. Wellsmore, R. Fowler.

The President, Mr. J. B. Randell, occupied the chair.

Fruit Cases: Mr. C. L. Winser reported on the action taken by the S.A. Fruitgrowers' and Market Gardeners' Association re fixing price of second-hand fruit cases.

Future Activities of the Association: The President stated that members had had a month to consider the alternative suggestions re future operations, and it was for the meeting to come to a decision on the matter.

Mr. A. O. Petersen stated that he was in favour of the Association going into recess so as to conserve the funds.

Mr. A. R. Willsmore wrote a letter stating that in his opinion it would not be advisable to go into recess altogether, as this might have a detrimental effect on the Association in the future. He suggested holding quarterly meetings for the time being instead of monthly meetings.

Mr. P. R. B. Searcy and Mr. F. F. Redden strongly supported Mr. Willsmore's suggestion. After a full discussion, it was resolved, on the motion of Mr. P. R. B. Searcy, seconded by Mr. F. F. Redden—"That meetings of the Association be held quarterly instead of monthly, and the next meeting be held on Friday, 27th October, and the Annual General Meeting of members be called for the same day."

Annual General Meeting: It was agreed that the Annual General Meeting be held at 2.30 p.m. on Friday, 27th October, the Executive Committee meeting on the same day to be called at 2 p.m.

General arrangements were left in the hands of the President and Secretary, the Premier, as Patron of the Association, to be invited to open the meeting, and an invitation to attend to be sent to the Minister of Agriculture. It was also agreed to invite Dr. A. R. Callaghan, Principal of Roseworthy College, to address the meeting.

Mr. F. F. Redden addressed the meeting, setting out what he had accomplished during the season in regard to disposing of Apples in country districts.. An interesting discussion followed, and it was pointed out that while Mr. Redden's efforts were commendable from an individual point of view, better results would probably be obtained for the industry as a whole by a properly organised and co-ordinated scheme among growers, the S.A. Selling Committee's scheme had been very successful during the present season, and

the industry would benefit further if the scheme was supported by all growers.

FROST DAMAGE TO CITRUS.

South Australia Suffers.

The exceptionally severe frosts in the Murray Valley have seriously damaged the S. Australian citrus crops, especially Lemons. This was stated by Mr. A. G. Strickland, Sth. Aust. Government Horticulturist, after inspection of the affected areas.

Prior to the frosts, the Sth. Australian Orange crop had been forecast at 800,000 bushels. This would be substantially reduced. The most serious damage was where the frost had broken the rind, making the fruit useless. Further, where brown spot had appeared, the juice might dry out. With other Oranges, even which showed no external injury, the juice was likely to be bitter.

It would take some weeks to assess the damage stated Mr. Strickland.

It is understood that many trees have been practically defoliated, and expert growers are advising that on such trees there should be no pruning until the Spring.

Victoria

Pakenham Upper, 3/7/44.

The season just ended has been one of the most abnormal on record. The setting of practically all varieties of Apples was good, and the prospects promising. Then from mid-November to mid-March the rainfall was much below average, and was the driest period experienced in this district for many years. The result was that by early February growth of the Apples had just about ceased, and Yates were commencing to colour and mature. Then in March and April copious rains fell, and all varieties, with the exception of Yates, responded wonderfully, improving remarkably in size and colour, particularly Jonathans. Yates, however, failed to respond, and thousands of cases failed to reach 2⅛ in., many trees carrying a possible six-case crop producing perhaps three cases or less with a percentage of 20 or less than 2⅛ in. and up. In addition to this, a heavy fall of Yates took place in May, the largest fruit suffering most.

The season was prolonged abnormally, some growers still picking Jonathans in June. Fruit in store will need to be carefully watched, as it is probable that the erratic sap flow will cause an earlier breakdown than usual, especially in the larger sizes. The main varieties grown in this district are Jonathans, Yates, Rokewood, Granny Smith, Delicious, Rome Beauty, Gravenstein and Statesman.
—W. H. Carne.

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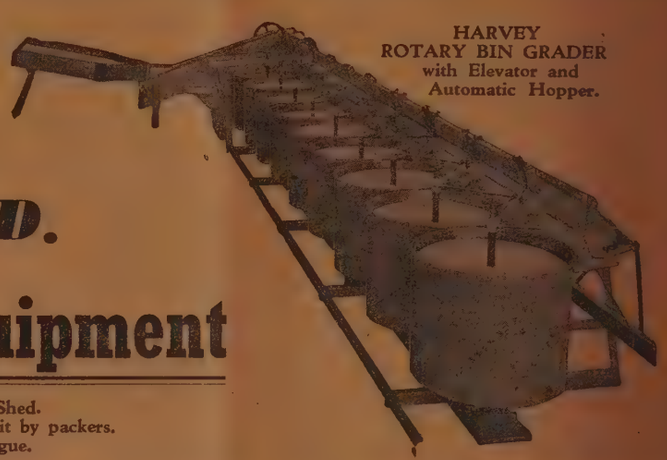

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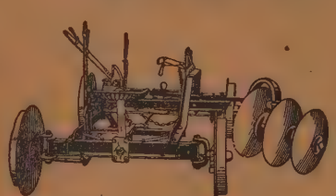

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Canned Fruits

THE CITRUS JUICE INDUSTRY.

Rapid Development Brings Certain Problems.

By Overcoming Defects an Industry of Permanent Value Will be Established.

Intensive Study by C.S.I.R.

IN DIRECTING ATTENTION to the rapid development of the citrus juice industry in Australia, especially for the use of the forces, Mr. L. J. Lynch, of the Council for Scientific and Industrial Research points out certain defects which are capable of being remedied.

1. A big improvement is looked for in the quality of the fruit delivered to the factories.

2. Also the presence of rind oil has frequently spoiled the flavour of the canned product.

These matters are dealt with in detail in the recent issue of the Food Preservation Quarterly issued by the Division of Food Preservation, C.S.I.R.

Continuing, Mr. Lynch states: How many times are we told that the juice is bitter, rancid, stale, but otherwise pretty good?

Most of the troubles are due to quite small quantities of rind oil, and it can still happen even when the oil content is within the specified limit. Citrus oil gets into the juice during extraction and at no other point. Our experience shows that oil content is low when juice is recovered by the hand-reaming method. Most of the troubles come with the adoption of automatic equipment.

As a preliminary to extraction in the latter procedure, the oil-bearing layer of the rind is removed by rumbling. The tendency here is to expose the soft spongy white albedo and this tissue picks up oil with great facility.

This is the crux of the problem, and a little thought will suggest ways of mitigating the trouble.

Firstly, use plenty of water in the rumbler, especially in the initial stages. The idea of keeping the oil-water bulk to a minimum is praiseworthy from the point of view of oil recovery, but disastrous to quality in the juice, and after all the oil is the by-product which as such should receive secondary consideration. Even when correctly rumbled, the fruit still carries with it more oil than we care to have in good quality juice.

The fact that citrus oils are volatile suggests a further remedy that is quite simple and very effective. Pass the fruit from the rumbler directly through a steam box and follow immediately with a cold water spray to reduce temperature as soon as possible. Those people who extract juice by hand-reaming will find it advantageous to hold the fruit for 2 or 3 days in airy bins. The storage period wilt the rind so that there is much less tendency for the oil cells to rupture when pressed on the reamers. If the fruit is soft when received at the factory, delayed storage is detrimental as it allows a period for mould development.

Air is introduced into juices mostly at the time of extraction. Some of it is dissolved but the greater part is occluded on tiny chromatophores and on small particles of pulp. Deaerators can and will remove all but a small residuum of air, but only if correctly operated. The dome-type deaerator installed in Australia depends for its efficiency upon impact and the vacuum level. Many, many times, processors have been told that juice must be drawn into the deaerator at the same level. If it is drawn up fifteen feet or so, the force with which it hits the dome is greatly reduced and an unduly high amount of residual air will remain in the juice quite irrespective of the vacuum level. With respect to the latter, we must admit that in the early stages of development of the industry a vacuum pump from any source was a treasure even if it only pulled 22 or 23 inches of mercury. Now we are asking for 29 inches and we mean what we say. This level means not only a highly efficient pump, but one placed right alongside the deaerator so that a short inch pipe connection will result in minimum impedance to air flow.

Freedom is needed from lacquer troubles. The effect of oily juice on lacquer is bad while the combined effect of oil and air is worse. We have always insisted that the best lacquered cans obtainable be used for citrus juices. On the whole, I think we have reason to be proud of our achievements in this direction too. Moreover, the immediate adoption of the latest American technique is likely to see a further substantial improvement in the near future. Still, always remember that no lacquer will successfully resist oil in citrus juice and the rest is up to you.

Speaking very seriously, we want to see the citrus juice industry survive in Australia when this war is finished. The Orange juice habit for breakfast is a valuable nutritional aid and one that should readily be established if we look to our laurels. Concentrate on quality in Valencia juice and you will be surprised to find your product palatable not only immediately after processing, but even when it has been held for twelve months or more.

Despite the foregoing criticisms the tone of the article was appreciative of the success so far achieved with the expression of confidence in the future.

The Empire's power is not going to wane, nor its might grow less. It must not fail. The cause for which we are fighting is just and our ideals those upon which Christianity has been founded. The keynote of all these things is freedom, of which Lincoln said:

"Those who deny freedom to others deserve it not themselves, and under the rule of a just God, cannot long retain it."

—Group Captain A. H. Cobby, in his new book, "High Adventure."

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Citrus Notes

MANURING OF CITRUS TREES

In Coastal Districts.

SALES OF CITRUS ORCHARDS in coastal arneas are increasing, and many purchasers are newcomers to the industry. In an article for the information of such growers, Mr. E. C. Levitt, fruit instructor of the N.S.W. Department of Agriculture, gives the following advice on the subject of manuring:—

Citrus trees make large demands on the soil for nitrogen, and consequently fertilizers containing large amounts of this plant food are desirable. The respect to the harvesting of their use of suitable amounts of phosphoric acid and potash to balance the fertilizer is beneficial, and it is a sound practice to use a mixed fertilizer at least once a year.

The main application of manure is made at the time of the Winter cultivation, and subsequent dressings may be made during the Summer. The quantities to apply will depend on the size of the tree and the type of manure used. Mixed and organic fer-

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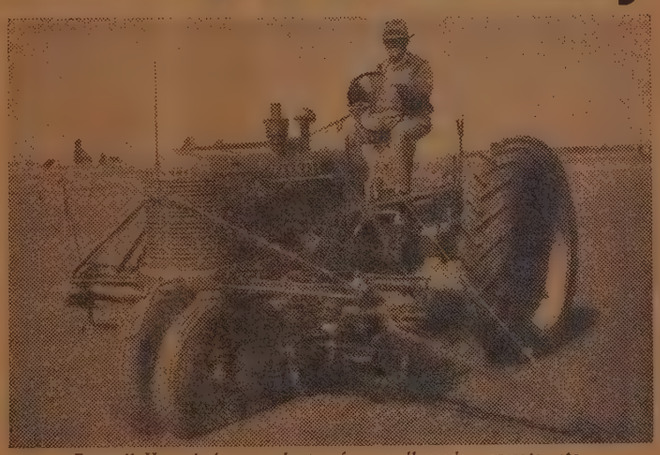
Now, more than ever Power and Speed . . . . . are necessary



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ilizers may be applied at the rate f 4 lb. for small, to 20 to 30 lb. for arge trees.

Chemical fertilizers such as nitrate f soda and sulphate of ammonia hould be applied in small quantities —about 1 to 3 lb. at a dressing. They re useful to boost the nitrogen sup-ly which is often on the low side in ixed fertilizers.

While these quantities are desirable, heir application is not likely to be ossible with the restricted quantities f fertilizer available under the ra-ioning scheme. The recommendation hould be regarded as a standard, and rowers should make the best use of he supplies they are able to obtain.

All animal manures, if available, re well worth using. Approximate uantities to apply would be 10 tons er acre for cow manure, 5 tons for heep and 2 to 3 tons in the case f poultry manure. Animal manures ossess the added advantage of im-roving soil texture.

CITRUS CROPS IN N.S.W.

Moderate to Very Light.

In a review of citrus crop condi-ions as at 30th June, 1944, the N.S.W. Department of Agriculture states:

Showery weather has been experi-nced during recent weeks in a num-er of the citrus growing areas on the oast, but in other districts, as well s in inland areas, mostly dry weather revailed, and substantial rains are eeded. Frosts also occurred in a umber of centres.

Generally speaking, citrus crops re moderate to very light. Navels re being marketed freely, but it is reported that a considerable amount of splitting has taken place in some instances. Valencias are developing more satisfactorily since the receipt of moisture, but many crops are expected to be light.

Murrumbidgee Irrigation Area.

Dry weather, with several very frosty nights, has been experienced. Harvesting of Navels is being accelerated at Yenda owing to fears of continued frosts and dry weather. Valencias are sizing quite well, but the crop is likely to be affected by the prevailing conditions. Lemons have been picked owing to the fear of frost damage.

A report from Griffith states that approximately 24,800 bushels of Navels were marketed during June, of which 10,000 were packed for export. Frosts have caused some external damage. The prospects for Valencias appear to have been improved with the sizing of the fruit. Crops are fair to good and some are excellent. Minor frost damage has been noted. Harvesting of Lemons is in full swing. Crops are patchy.

Navels are expected to be slightly better than last year around Leeton. Harvesting is now proceeding and some of the fruit is being packed for export to N.Z. Some slight frost damage is showing. Valencias are now colouring and are sizing reasonably well and the outlook is considered to be better than last season. Lemons are being marketed; crops in most cases are good and some fruit has been packed for consignment to N.Z.

Frost damage in varying degrees is apparent in many groves on the M.I.A.

N.Z. CITRUS COUNCIL.

Annual Conference.

Citrus Planting at a Standstill.

IN OFFICIALLY OPENING the recent Annual Conference of the N.Z. Citrus Council, Mr. A. B. Congdon, Auckland Director of the N.Z. Fruitgrowers' Federation, congratulated the Council on the progress it had made in the four years of its existence. He said that fruitgrowing should be placed on the same priority as vegetable production so far as supply of fertilizers was concerned.

The President of the Council, Mr. H. H. Booth, said that for the past five years there had been no appreciable planting of citrus trees in N.Z. At present there was an acute shortage of citrus nursery stock. Unless there was some real effort to build citrus production there was going to be an acute shortage of N.Z.-grown citrus fruits.

Conference discussed ceiling prices, and it was agreed to present the industry's case with regard to Grapefruit, Sweet Oranges and Meyer Lemons. It was decided to seek an adjustment of Lemon prices to meet increased cost of wages.

Mr. A. W. Hawley said that the name of N.Z. Grapefruit was being killed because retailers were selling marmalade Oranges as Grapefruit. Growers should label such cases "Marmalade Oranges."

Office-bearers were elected: Mr. G. T. Burberry, President, Mr. H. H. Booth, Vice-President, Mr. S. M. Conway, Secretary.

Visits pere paid to the Experimental Citrus Orchard and to local growers' citrus groves, when many practical cultural problems, including rootstocks, were discussed.

WORN OUT CITRUS LAND.

Research Station Promised in N.S.W.

Replying to a deputation from the Gosford District Agricultural and Citrus Association on July 31, the N.S.W. Minister for Agriculture, Mr. Graham, assured growers that the Government was anxious to establish a research station to deal with problems which were causing concern among orchardists.

Members of the deputation asked the Government to explore the prospect of saving worn-out land. Large numbers of orchards on the coast had gone out of existence mainly because means had not been provided to restore fertility. Hundreds of citrus groves in New South Wales had therefore ceased to function. In some cases the land had been abandoned.

Mr. Graham said he and the department were alive to the problems confronting the industry, and that, with the member for Hawkesbury, Mr. F. J. Finnan, and his officers, he would visit Gosford to inspect proposed sites suitable for a research station.

AUSTRALIAN FRUITGROWERS

WE MUST beware of trying to build a society in which nobody counts for anything except a politican or an official, a society where enterprise gains no reward and thrift no privileges.

Churchill.

Vote 1 NO on August 19

(AUTHORISED BY E. R. COTTIER, 174 COLLINS STREET, HOBART, TASMANIA.)

The Australian Vegetable Grower

Science in Vegetable Culture

Horticultural Abstracts.

The Pennheart Tomato.

THE NEW EXTRA EARLY scarlet-fruited Pennheart Tomato is an Oxheart x Penn State Earliana cross. Seven years' tests at many localities proved Pennheart to excel the other early varieties with respect to earliness percentage of marketable fruit, fruit weight and yield, owing to its compact growth, which makes for an optimum planting distance of 2 x 4 feet. The new variety should neither be staked nor pruned. It is not wilt resistant.—C. E. Myers, Pennsylvania Agric. Exp. Stat.

Studies on the Effect of Topping Young Tomato Plants on Fruit Set and Yield.

TOMATO PLANTS grown, before planting out, at 4 inches apart in flats or in 3-inch pots spaced so that the plants were 4 inches apart, yielded a significantly greater number and weight of fruit than plants spaced before planting 2 inches apart in flats or in 3-inch pots placed so as to touch. Pot-grown plants consistently but not significantly yielded more than flat-grown plants. Plants which were topped above the second leaf node two weeks before planting out showed curtailed early yields, otherwise their reactions to wide spacing and potting were similar to untopped plants, but by the end of the season all differences except that of spacing lacked significance. Topping may be regarded as an emergency measure for holding young plants late in the season.—K. C. Westover, Amer. Soc Hort. Sci.

Getting the Most from Fertilisers for Vegetable Crops.

IN EXPERIMENTAL WORK during five seasons, starter solutions of 8 lb. of 4-16-4 fertiliser per 50 gals. water for Tomatoes, Cabbage, Sweet Corn and Snap Beans and 4 lb. of the same fertiliser for seeded crops were found to increase the yield significantly. A cupful of the solution was applied to the roots of each transplant as it stood in the hole before the soil was pulled in over them. About one quart was applied to each 10 feet of seeded row before covering the seed with soil. This treatment proved particularly beneficial in increasing early yields of the crops mentioned, other vegetables having not yet been tested. The fertiliser should be mixed with water at least one hour before using, stirred from time to time, and finally diluted to the volume required.

Other combinations of complete fertiliser may be substituted for the 4-16-4 one. In large-scale field experiments the effects of applying fertilisers broadcast, in bands, in broken bands, ploughed down broadcast, ploughed down in bands, and applied as solution, were compared. As far as vegetables are concerned the ploughing down of a single band of fertilisers in each furrow gave particularly promising results. The advantage of this method is thought to be that the fertiliser located 6-7 ins. below the surface is surrounded by moist soil and can go into solution and enter the roots more freely. Furthermore, the nutrients are less readily immobilised or leached. Application of the fertiliser in a single band has the additional advantage that the nutrients become slowly available throughout the season.

All the crops tested: Tomatoes, Sweet Corn, Peas and Carrots, responded favourably to the treatment. The results obtained by applying fertiliser in solution did not warrant the introduction of this method for vegetable cultivation. The combination of a starter solution and band placement is recommended for seeded crops.—E. M. Rahn, Pennsylvania Agric. Exp. Station.

Starter Solutions for Tomato Plants.

OF THE FERTILISERS USED in starter solutions for Tomato plants, tested at the New York State Agricultural Experiment Station, Geneva, U.S.A., the grade 4-16-4 gave the best results, but the grades 4-10-5 and 4-10-10 were also very satisfactory. The solutions were used at the rate of 10 lb. to 50 gal., applying ½ pint to the roots of each Tomato plant on transplanting. The increase in yield was about 1½ tons per acre. The less acid ammoniated superphosphate was found to be more beneficial in the mixture than the ordinary superphosphate and sulphate of ammonia. Some high analysis mixtures, such as the 13-26-13 or the 11-32-14 at the rate of 4 lb. to 50 gal., and the new soluble alkaline 16-48-18 at the rate of 3 lb. to 50 gal., are still more effective, but are not readily obtainable at the moment. The ingredients of these latter must not be mixed until ready to use, while stock solutions of all the other mixtures can be prepared in advance. When the solution was applied to the foliage nitrogen apparently was and phosphorous was not absorbed. Leaf treatment was greatly inferior to root treatment.—C. B. Sayre, N.Y. Agric. Exp. Station.

Paper Shields Protect Vegetables. Ten Years Trials of Paper Shields to Prevent Frost Damage.

IN FIELD TRIALS over a period of ten years it was found possible to harvest all sorts of Cabbage species, Cucumbers and Beans from 10 to 24 days earlier as the result of protecting them from the cold with paper caps provided with a hole in the middle. Only in one year did failure occur owing to the fact that frost persisted so long that the ground could not be properly worked, and planting out had to be delayed.—B. Goppert, German.

Effects of Micro-Nutrient Deficiencies on Growth and Vitamin Content of the Tomato.

THE EFFECT OF MANGANESE, copper, zinc, molybdenum and iron deficiencies on the Tomato plant as a whole and on the ascorbic acid, riboflavin and provitamin A content of the fruit was studied at the Plant, Soil and Nutrition Labora-

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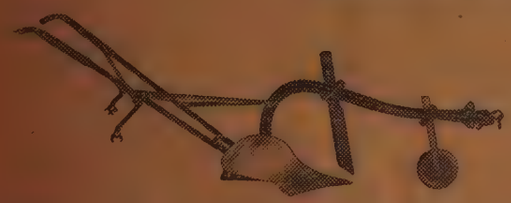
MASSEY HARRIS



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Length overall 7 ft. 6 in., Soft-centre Mouldboard 22 in., 9 in. polished Welded Steel Share.

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Turns furrows to 8 inches deep.

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Willard Batteries are built to serve . . . long and faithfully . . . under difficult conditions. Serving to-day on every battle front and on the home front, Willard Batteries are adding laurels to their well-earned reputation for SERVICE. A SERVICE that continues to make friends for Willard.

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WILLARD STORAGE BATTERY CO., of AUST. PTY. LTD.
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tory, Ithaca, N.Y. (U.S.A.). An apparatus for micro-nutritional studies is described which provides an adequate supply of solution for large plants, secures uniform aeration in replicated cultures and protects them against possible impurities from the outside atmosphere.

Growth and fruitfulness of the plants were seriously affected by the deficiencies, the symptoms of which are described. The effect of molybdenum deficiency was negligible., Development of a symptom was closely correlated with the distribution of the element in the plant. Iron deficiency raised the ascorbic acid content of Tomato fruits by 30 per cent., whilst other deficiencies did not cause the vitamin C content to vary as compared with the controls. Neither did any of the deficiencies affect the riboflavin and provitamin A content significantly. Variations in riboflavin content, however, were found to occur with different positions in the greenhouse and with different dates of fruit ripening.—C. B. Lyon, K. C. Beeson and G. H. Ellis, in "Botanic Gazette."

VEGETABLE CULTURE.

Hints for August.

Continue planting crowns of Asparagus in rows three feet apart, allowing three feet between each plant.

Seeds can be sown in spring. The soil needs to be made very rich with manures for growing Asparagus, also for growing Rhubarb, the roots of which should also be planted now.

Put in a good sowing of Onions in seed bed or box and transplant seedlings to their cropping positions: trim roots and tops before planting. Brown Spanish and Australian Brown are good commercial varieties.

Seeds for present sowing include Broad Beans, Peas, Parsley, Mustard, Cress, Carrot, Parsnip, Radish, Spinach and Turnip. Plant seed or seedlings of Red and Silver Beet, Lettuce, Leek, Cabbage and Cauliflower. Plant tubers of Potatoes and Jerusalem Artichokes.

Under glass, sow seeds of Tomatoes, Cape Gooseberry, Cucumber, Marrows, Pumpkins and Pepper.

The Choko is a nicely flavoured Cucumber of the Marrow family. Plant in a warm position at end of August or early September. They are rampant climbers, and need supports.

Space should be found for herbs—Sage, Thyme, Marjoram, Mint, etc. Plant roots now.

Flowers and Fruit.

Sow seeds of Mignonette, Annual Chrysanthemum, Alyssum. Seeds or seedlings of Carnation, Antirrhinum, Sweet Peas; roots of Delphiniums, Heuchera, Lily of the Valley, perennial Asters, perennial Phlox, Shasta Daisies and Pentstemon.

Plant ornamental deciduous trees, Roses, also deciduous fruit trees of all descriptions, berry bushes and plants of Strawberries.

Some Hints on Onion Planting.

THE LAND FOR ONIONS in S. Africa should be ploughed or dug some months before planting or, if this is not possible, should undergo early, shallow cultivation at planting. Some manuring is advisable, especially if the soil be light. A bushel of yard manure 1 lb. superphosphate per 10 sq. yards should be worked into the top 6 inches with a dressing of agricultural lime, 4 lb. per 10 sq. yards, in the case of acid soils.

Early ploughing followed by a rest of six weeks is an important factor in cutworm control. If this cannot be arranged the land should be baited with cut-worm bait after ploughing when the weeds have dried up.

Planting furrows should not exceed 2 inches in depth or the bulbs may be retarded and malformed by soil pressure and the presence of air pockets under the bulb. Spacing should be 4 to 5 inches on poor soil and 3 inches on fertile or well manured land. Planting should be done when the soil is moist or in the afternoon as a scorching sun will cause a check to growth. Regular irrigation should be maintained during growth but restricted when the bulb is ripening. The best late varieties for cropping and keeping qualities are Australian Brown and Brown Spanish. — V. Reinecke and G. C. Haines, "Farming," S. Africa.

VEGETABLE CULTURE IN VICTORIA.

Size and quality of Imperial D Lettuce at Mildura and Horsham are good. Large areas of Carrot sets for seed are being planted out in the Mildura and Swan Hill districts.

Generally, yields of Carrots in Gippsland were light during June, but several growers on more favoured situations produced in the vicinity of 40 tons per acre.

Arrangements have been completed to obtain 10,000 tractors for Australia. Most of the tractors will be obtained under lend-lease from the United States, the remainder from Britain.

Cable Address: DAVIS, MELBOURNE. Code: "ABC," 4th and 5th Editions. Box, G.P.O. 148B.

J. DAVIS PTY. LTD., *Fruit Merchants*

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Australia looks to you to produce and sell good fruit, but to **PRODUCE GOOD FRUIT** and have it badly sold is a reflection on your business ability. To sell well is as important as to produce well. The greatest combination that can exist beneficially is that between a painstaking fruitgrower and a painstaking salesman.

If you have good fruit to market, you will find in the firm of **GEORGE LISTER PTY. LTD.** the service you require. Established over 50 Years.

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N.S.W. CHAMBER OF FRUIT AND VEGETABLE INDUSTRIES.

At a meeting convened by the N.S.W. Chamber of Fruit and Vegetable Industries, Sydney, on July 4, it was decided to form a Pineapple Section of the Chamber, and the following officers were elected:—

Chairman: Mr. W. Musgrove. Vice-Chairman: Mr. B. Cox. Committee: Messrs. I. Silk, A. E. Schuster, A. Slater, F. Chilton, C. J. Kellaway

This section is one of a number already operating with the assistance of their various committees, under the guidance of the Council of the Chamber.

Details of the Sections are as follows:—

Vegetable Section.—Chairman: Mr. E. Cooke: Vice-Chairman: Mr. C. Smith. Committee: Messrs. L. Silk, W. O. Woods, S. J. Rhodes, A. Hickman.

Banana Secton.—Chairman: Mr. J. Hawke. Vice-Chairman: Mr. C. Harris. Committee: Messrs. W. J. Sinclair, F. Sawyer, W. Lui, I. Silk, J. J. Mason.

Citrus Section.—Chairman: Mr. J. W. Blick. Vice-Chairman: Mr. J. J. Mason. Committee: Messrs. B. Cox, R. Cave, R. Black, H. M. Gauld, J. W. McKenzie.

Potato Section.—Chairman: Mr. W. L. Mellor. Vice-Chairman: Mr. T. Clune. Committee: Messrs. J. Minjoy, W. Fraser, W. B. Yips, R. B. Watson, M. J. O'Brien.

Strawberry Section. — Chairman: Mr. A. Slater.

The annual meeting of the Chamber will be held on August 31, 1944.

Improved Transport Needed.

At a Conference held between the Master Fruit Carriers' Association and the Executive of the Chamber, it was decided to form a Committee to publicise the improvements necessary to effect an adequate transport system with regard to the fruit and vegetable industries. It was felt that refrigerated trucks were long overdue in this country, and that many improvements, both at Darling Harbour and in the markets proper were an absolute necessity.

A further meeting of this Committee will be held at an early date, when it is hoped to arrange for a repetition of the very interesting lecture given by Colonial Mills of the United States Army regarding the use of special equipment known as the "fork lift." This method ensures the minimum handling of produce and the lecture should be of the greatest possible interest to grower and distributor alike.

The Chamber has proved to be of great assistance to members, providing information and advice concerning the price fixing regulations and manpower problems, and the services of its General Secretary, Mr. P. S. Macdermott, or the Assistant Secretary, Miss V. Read, are always available, should they be required by growers or their representatives at any time. The Chamber, being an industry organisation is anxious to co-operate in all matters pertaining to every branch of the industry.

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Bodies Available:

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- OTHER APPROVED ESSENTIAL BODY TYPES.

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INTERNATIONAL HARVESTER COMPANY OF AUSTRALIA PTY. LTD.
INCORPORATED IN VICTORIA

It is great, and there is no other greatness—to make one nook of God's creation more fruitful, better, more worthy of God; to make some human heart a little wiser, manlier, happier, more blessed, less accursed.—Carlyle.

:: :: :: ::

Judge: Now, tell the court how the accident happened.

Defendant: Well, I dimmed my lights and was hugging the curve.

Judge: Just so! That's how most accidents happen. Fined £10 and 14 days.

:: :: :: ::

Jean: Now that we're engaged, you'll give me a ring, won't you?

Bill: Yes, certainly, dear. What's your number?

:: :: :: ::

Missionary: Poor man! So you know nothing of religion.

Cannibal: Oh, yes. We got a taste of it when the last missionary was here.

:: :: :: ::

Bluey: After what's happened in Russia, do you think Hitler's changed any?

Curley: No, a leopard can't change his spots.

Bluey: Yeah, but he can have the spots knocked off him.

THE HORSE IN WINTER.

By replacing motor transport and helping to increase the nation's food production, the horse is doing an excellent job in furthering the war effort. As one of the most valuable of domestic animals, the horse deserves more than ordinary care, especially during the winter months.

Mr. W. D. Shew, Senior Veterinary Officer of the Victorian Department of Agriculture, advises that, with the advent of winter, horses at work should be given an increased and more stimulating ration. Stabled horses are best clipped, except for the legs. Working horses, not stabled, should also be clipped and fitted with a good type of waterproof canvas rug. All horses should be thoroughly groomed each day. Rugs need to be brushed daily on the underside.

Horses at pasture should have their feet regularity trimmed, and, when necessary, their teeth attended to by a veterinarian. Regular dental examinations are essential to keep horses sound and well.

Producers' Co-operative Distributing Society Ltd.

Are now paying a Bonus of 33⅓% on all Commissions charged to regular clients of the Fruit & Vegetable Section for year ending Sept., 1943

Send Your Consignments TO US

MELBOURNE & SYDNEY.

Weaned foals require plenty of nourishment; excellent additions to their diet are half a pound of crushed oats, together with a tablespoonful of di-calcic phosphate, and, if succulent pastures are not available, one or two tablespoonfuls of cod liver oil substitute in a little damped bran.

OLIVES URGENTLY REQUIRED.

The acute shortage of olive oil, due to war requirements, has resulted in a great demand for ripe Olives. Growers, large and small, are urged to see that all Olives are harvested instead of going to waste. Simple directions for harvesting and dispatch are:—

1. Do not harvest until the fruit on the tree is ripe.
2. Leaves can easily be separated from the fruit by throwing against the wind.
3. When clean, put the Olives into sacks (cases are too costly these days) and dispatch promptly to ensure arrival in good condition.

Let this be another contribution to the national effort.

APPLES IN U.S.A.

The total commercial production of all varieties of Apples in U.S.A. in 1943 was 88,086,000 bushels — the smallest crop produced in the ten-year period (1934-1943). Delicious and Jonathan are the two varieties of outstanding importance.

LIMIL

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BORDEAUX and LIME-SULPHUR

The Superfine Non-Deteriorating Qualities of "LIMIL" distinguish it as an unequalled Spraying medium.

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DAVID MITCHELL ESTATE

Oliver's Lane, Melbourne, C.1.

Market Notes and Prices

NEW SOUTH WALES.

Sydney, 26/7/44.

The State Marketing Bureau reports as follows:—

Fruit (City Municipal Markets).

Fairly large consignments of Navel Oranges were received from both coastal sources and the Murrumbidgee Irrigation Area. Demand generally was somewhat restricted, although large-sized fruit sold reasonably well. Counts above 150, however, were dull of sale, and values were lower. Some of the Murrumbidgee Irrigation Area fruit did not open up satisfactorily, with the result that sales were slow. Towards the close of the period supplies received from coastal groves were lighter.

Pears continued to meet a good inquiry. Buyers had a wider selection of varieties to choose from. Victorian consignments comprised Winter Nelis, Beurre Bosc, Beurre d'Anjou, Glou Morceau, Keiffers, Josephine and a few Packham's Triumph; local supplies consisted of Josephine and Winter Nelis. Values were firm, and 20/- per bushel was obtained for other than very small sizes of all varieties, with the exception of Keiffer, which sold at 15/-.

Coloured dessert Apples continued to sell well, especially large sizes. Supplies of both local and interstate Delicious were very light; likewise, large fancy grade Granny Smiths from centres within New South Wales. The bulk of the fruit on offer was from interstate sources, and comprised Jonathan, Rome Beauty, Cleopatra, Statesman, Democrat and Granny Smith. Up to the ceiling price of 19/- was obtained for Jonathan and Granny Smith; Rome Beauty and Cleopatra sold to 18/-, while Democrats were on offer at from 14/- to 16/- per case. Local Dougherty and Statesman realised the maximum of 19/- for best sizes.

Consignments of Pineapples received during the period amounted to 4,600 cases. Demand was rather quiet, but it was still possible to obtain the ceiling price of 25/- per case for a few special packs. Values generally ranged up to 22/-.

Passionfruit were lightly stocked, and values were maintained, choice packs selling to 38/- per half-case, and occasionally higher.

Current quotations were:—

Apples: N.S.W. Granny Smith, to 19/-; Dougherty and Democrat, 15/- to 19/-; Statesman, 12/- to 19/-; Victorian—Jonathan, 12/- to 19/-; Rome Beauty, 10/- to 18/-; Tasmanian—Granny Smith, 15/- to 19/-; Democrat, 14/- to 16/-; inter-State—Cleopatra, 12/- to 18/-; Sturmer, 15/- per bushel case. **Pears:** N.S.W.—Josephine, fancy, 20/-, good grades from 10/-; Winter Nelis, 20/-; Victorian—Josephine, Winter Nelis, Packham's Triumph, Beurre Bosc, Beurre d'Anjou and Glou Morceau, 20/-; Keiffer, 15/-. **Oranges** (Navel): Coastal, 10/- to 16/-; selected large sizes to 18/-; Murrumbidgee Irrigation Area, 12/- to 16/-. **Lemons:** Coastal, 9/- to 15/-. **Mandarins:** N.S.W., 10/- to 20/-, few higher, small and inferior lower. **Grapefruit:** 8/- to 14/- per bushel case. **Bananas:** All sizes, f.a.q., 7d. per lb. (weight 80 to 90 lb. per case), few inferior lower. **Passionfruit:** 25/- to 38/-, few higher, per half case. **Strawberries:** Queensland, 10/- to 16/- per tray (24/- to 42/-, specials to 60/- per doz. packets). **Papaws:** 16/- to 30/-, few higher. **Pineapples:** 14/- to 22/-, few 25/- per tropical case. **Jam Melons:** 7/- to 8/- per cwt.

Current prices were:—

Peas, 23/4; **Beans,** 20/- (mainly nominal) per bushel; **Cabbages,** 5/- to 12/-; **Cauliflowers,** 6/- to 24/-; early sales special large, 30/-, few higher, per dozen. **Lettuce,** 10/- to 22/- per case; **Carrots,** 4/- to 7/- per doz. bunches; bagged (N.S.W.), 12/- to 20/-; special washed, 25/-; inter-State, 10/- per cwt. **Parsnips,** 5/- to 7/- per dozen bunches, 14/- to 26/-, few higher, inferior lower, per cwt.; **White Turnips,** 3/- to 4/-, few 5/-; **Rhubarb,** 8/- to 10/-; **Spinach,** 7/- to 9/-; **Celery** (local), 12/- to 24/-; Parsley, 12/- to 24/-; **Beetroot,** 4/- to 6/- per doz. bunches. **Potatoes:** N.S.W., old, Tasmanian Brownells and other varieties and Victorian Carmans and other varieties, 1st grade, 7/10½. **Onions,** brown, 23/6; **Swedes,** 10/- to 12/-; **Pumpkins,** 12/- to 14/-; **Sweet Potatoes,** 10/- to 14/- per cwt. **Tomatoes** (N.S.W.), 5/- to 15/-, inferior lower; Queensland, 8/- to 12/-, few higher, inferior lower; repacked, 10/- to 16/- per half-case. **Mushrooms** (cultivated), 4/- to 5/- per lb.

VICTORIA.

Melbourne (3/8/44).

Vegetables: Beans, kidney, 48/- to 54/- 50 lb.; Beetroot, 8d. to 10d. doz., ceiling 17/- per cwt.; Beet, silver, 2/6 to 3/6 doz. bunches; Cabbages, 4/- to 8/- doz.; Carrots, 2/- to 4/- doz. bunches, ceiling 28/- cwt.; Cauliflowers, 6/- to 12/- doz., few to 14/-; Celery, 6/- to 9/- doz.; do., Adelaide, 28/- to 35/- double case; Garlic, 1/3 to 1/6 lb.; Horseradish, 1/- to 1/3 bundle; Leek, 5/- to 9/- doz. bunches; Lettuce, 6/- to 12/- case, few to 14/-; mint, 3/- to 3/6 doz. bunches; Melons, citron, 6/- to 18/- doz.; Onions, green, 2/6 to 3/6 doz. bunches; Silverskins, to 4/-; Parsley, 2/- to 3/- doz. bunches; Parsnips, 3/- to 5/- doz. bunches, ceiling 28/- cwt.; Peas, 36/- to 40/- 50 lb.; Potatoes, 10/- to 10/6 bag; Pumpkins, 9/- to 36/- doz., 8/- to 12/- bag; Radish, 2/6 to 3/- doz. bunches; Rhubarb, 3/- to 4/- doz. bunches; Savoys, 3/- to 6/- doz.; Spinach, 4/- to 6/- doz. bunches; Sprouts, 6/- to 10/- doz. lb., few to 11/-; Tomatoes, 20/- to 30/- case; Turnips, 2/- to 3/- doz. bunches; do., Swede, 8/- to 14/- bag; do., 4/- to 6/- doz. bunches; Vegetable Marrows, 5/- to 8/- doz.

Fruit (Bushel Case, unless stated): Apples, eating, 6/- to 17/-, few to 19/-; do., cooking, 6/- to 14/-; few to 17/-; Oranges, Navel, 10/- to 18/6 (max.); do., Common, 8/- to 12/-; Lemons, 10/- to 20/- (max.); Mandarins, 10/- to 24/-; few to 30/- (max.); Pears, dessert, Packham, 17/- to 20/-; few to 22/-; other varieties, 16/- to 18/-; Pears, culinary, 8/- to 14/-; Papaws, 20/- to 30/- double case; Bananas (green), 6½d. to 6¾d. per lb.; ripe to 7½d.; Pineapples, 22/- to 27/6 double case (5½d. lb. max.); Passionfruit, 30/- to 40/- half case, few to 45/-; green ginger, 1/6 lb.

NEED FOR CARE IN HARVESTING CITRUS FRUITS.

Much wastage occurs in citrus fruit as the result of damage caused by careless handling, and every precaution should be taken by growers against such loss. Though citrus fruits may not show injury from bruises for some time after picking, in reality the oil cells of the skin are very easily damaged, and it is through such injuries to the skin that decay germs, such as those causing blue mould, make their entrance. Hence great care is necessary when picking and packing for market. Gloves should be worn or the fingernails kept extremely short.

Some of the more common causes of mechanical injury to the fruit are—

1. The presence of foreign matter, such as dirt, twigs, etc., in picking-bags and field boxes.

2. Field boxes of rough wood and with projecting nails.

3. Over-filling of the field boxes.

4. Dropping of the fruit into the field boxes and grading bins instead of rolling it in.

5. Not clipping the stems close to the button.

6. General rough handling of the field boxes of loose fruit, particularly speeding with a load over rough roads.

All mouldy fruits should be destroyed, preferably by boiling or burning, and never allowed to lie around, as they contaminate the atmosphere with spores, which will cause further rotting.

All plant used in the handling of the fruit should be kept scrupulously clean, where possible being washed down frequently with a solution of ¾ per cent. caustic soda or an equivalent proprietary preparation.

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Poultry Notes

Chicks Need Fresh Air and Nutritious Food.

It has been the practise for poultry keepers to hatch chickens during July, August and September. Chickens must not be kept in the brooder too long: they should gradually be transferred to open air conditions.

Where commercially mixed and other rations are satisfactory there is no reason to change. A Western Australian authority states that any of the following mash mixtures, with cracked grains, greenstuff and fine shell grit, will give good results:—

	Mix. 1.	Mix. 2.	Mix. 3.
Ground wheat . .	40	30	50
Grd. hulled oats	20	10	30
Ground maize . .	20	40	—
Bran	10	10	10
Dried Buttermilk	10	5	—
Meatmeal	—	5	10
Common salt . .	½	½	½

The above mixtures can be given as a dry or wet mash. The usual custom is to have a dry mash always available, and to feed a wet mash twice a day. It can be fed from the first feed, when the chicks are about a day old, until they reach maturity, or until they are well grown, and then fed on an adult ration. Portion of the ground wheat and ground oats may be substituted with ground barley.

For the grain portion of the ration, 60 lb. of cracked wheat, 20 lb. of cracked hulled oats, and 20 lb. of cracked maize, make a good mixture. Only a small amount of grain is usually fed at first, and the quantity gradually increased. After the chickens are about eight weeks old, coarser grain or whole wheat may be fed.

It is important that the chickens should receive as much tender green food as they can eat at least once a day. Fine shell-grit should be available in separate hoppers. A liberal supply of fresh and clean drinking water always should be at hand.

"SCALY LEG" IN POULTRY.

Its Treatment and Prevention.

"Scaly leg" is a disease of the feet and legs of fowls, characterised by the piling up of the scales of the unfeathered portions with the accumulation of scabs.

Affected birds should be isolated and treated individually. The feet and shanks should be dipped in warm, soapy water and as much as possible of the scabs and scales removed with a nail brush. The shanks and feet should then be thoroughly treated with one or other of the following dressings:—

(a) Phenol disinfectant, 2½ to 5 per cent. solution, according to the preparation used (one to two tablespoonfuls to one pint of water).

(b) Kerosene emulson.

(c) Lime and sulphur mixture; or

(d) Kerosene and non-drying oil, equal parts.

The treatment should be repeated in seven days and again as required. Disinfectants and creosote (wood preserving oil) are commonly used in greater strengths than above, or even undiluted, but while they effect rapid cure, they are too severe on the fowls.

Houses should be well cleaned out and, if their construction allows, disinfected. Yards should be well cleaned up, litter removed and dusty patches dug out and filled with clean earth.

Though the mites are able to live on the ground for about thirty days, it is not thought that they survive much longer, and therefore the removal of fowls from a run for, say, six to eight weeks should be of benefit.

Egg production in Australia has been raised to an all-time record. This year's output of about 85,000,000 dozen compares with 81,000,000 dozen last year and about 56,000,000 before the war.

Pig Notes

YARDS FOR PIGS.

Requirements for Health.

Yards for pigs should be sufficiently large to enable the animals to have plenty of exercise. Except in the final period of fattening, when the exercise is restricted, they should have a free run. Pigs are far more healthy when grazed in paddocks than when enclosed in pens. Where it is not convenient to run the pigs over large areas, and they are confined to small yards, a system of alternate yards gives good results.

Under this system, when one yard becomes foul from constant use by the pigs it can be ploughed or dug up, limed, and a green or root crop sown, the pigs being transferred to another yard. When the crop is up the pigs may be returned to that yard and have the benefit of the food, while the yard just vacated can then be treated in a similar manner. This serves the double purpose of cleansing and sweetening the soil and providing some green food. When the same yards are used for long periods without being rested, the soil becomes a source of infection for various microbic and parasitic diseases. When pigs are grazed over large areas a portable pig-house, built on slides, is very convenient.

OATS FOR PIGS.

Oats are not satisfactory as the only grain for pigs on account of the relatively high fibre content of oats (10 per cent., as gainst about 2 per cent. in wheat). Indications from overseas observations (states the N.S.W. Dept. of Agric.) are that up to one-third of the grain ration may be replaced by oats without materially affecting growth rates or amount of feed required per pound live weight increase, and that where up to half of the grain ration of growing stock is made up with oats, decrease in growth rates and increase in amount of feed per pound live weight gain is probable.

HOUSING OF PIGS.

Adequate shelter is essential for pigs, for they are very susceptible to dampness, cold and draughts. Sties should, if possible, face the north or east, so that they will get the full benefit of the sunlight. Sties should be built on rising ground to ensure good drainage.

The roof should be sufficiently high to admit of the sty being cleaned easily. The walls should be smooth, so that there is no harbour for animal parasites. On this account walls of split bush timber are objectionable.

Allowance must be made for plenty of sunlight and fresh air, but the walls must be impervious to the wind, so that the sty is not draughty.

The floor should be impervious to moisture. The common custom of allowing the pigs to sleep on the earth, while doing away with the necessity for bedding, has much to condemn it.

Concrete makes the most sanitary floor, but, as it is cold and hard, a sleeping platform of wood is necessary with it. If this is made sufficiently light it is easily removed for the purpose of cleaning the sty. A floor made of hardwood, well joined and raised above the ground level, is quite satisfactory; but floors made of slabs laid on the ground are little better than the earth itself.

Pig production in Australia has been fixed at the record target of 143,000 tons this year, compared with pre-war production of 87,000 tons. The Commonwealth pays 9d. per lb. for first-quality baconers.

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Science in Horticulture

ITEMS OF INTEREST from all parts of the world are included in the quarterly abstracts from the Imperial Bureau of Horticulture, E. Malling, Eng. Here are a few of these extracts.

Nursery Fruit Trees, Dwarf and Standard Understocks Their Handling and Planting.

After noting the reasons for the choice of pedigree trees, and legislation covering the movement of horticultural material, the authors summarise the performance of fruit tree rootstocks in North America.

In Apples the hardy and vigorous seedlings and the Malling rootstocks are considered in relation to their effect upon scion varieties. Their propagation, root development, uniformity, precocity, yields, effect on quality of fruit, anchorage and cold resistance, susceptibility to disease and length of life, are summarised. Opinions of current workers, in the U.S.A. on the uses of semi-dwarfing and dwarfing Apple stocks are not very favourable, though the semi-dwarfing stocks are regarded as having "possibilities."

Rootstocks for Apricots, Cherries, Peaches and Nectarines, Pears and Plums are also reviewed.

Apricots are worked mainly upon Apricot, though Peach and Plum are used to some extent.

The Western Sand Cherry (P. Besseyi) makes a dwarf tree. The two chief stocks for Cherries are the Wild Sweet (P. Avium), and the Mahaleb (P. Mahaleb), growers favouring the former and the nurserymen the latter. Mahaleb is said to be grown from layers, cuttings and suckers. This is contrary to its performance in England, where Mahaleb rootstocks, under acid Cherries, have not been known to sucker, layers are shy to root and both hardwood and root cuttings have completely failed. Dwarfing rootstocks for Cherries are mentioned as being used only to a limited extent in America.

The great majority of Peaches and Nectarines are grown on Peach seedling roots. Occasional attempts to use dwarfing rootstocks for Peaches are mentioned.

The chief Pear rootstocks used are still the Perry types (Pyrus Communis), which have proved very satisfactory. Seeds of Beurre d'Anjou, Hardy, Bartlett and Winter Nelis produce good seedlings. Bartlett seedlings sucker little, but Winter Nelis tend to do so. The Oriental Pears, introduced because of their resistance to "black end" have all proved unsatisfactory. Quince rootstocks, used for their dwarfing effect, are susceptible to cold injury and require more attention when planted out.

Myrobalan (P. Cerasifera) is the chief Plum rootstock. Next comes the Peach (P. Persica) which is good for most of the Japanese Plums, especially in sandy soils. Varieties incompatible with Myrobalan appear to do well on Peach. A number of other Plum rootstocks are mentioned as having been used for special purposes. Variations in nursery practice, affecting resulting trees, are described in considerable detail.

Rootgrafted and budded trees, height of budding, doubleworking, age and maturity at digging and grading trees for sale all receive due attention. The use of resistant frameworks against fireblight in Pears is mentioned.

Commencing on doubleworking, to circumvent stock/scion incompatibility, the authors write, "Generally the first scion, or intermediate, is allowed to grow for at least a year before the second scion of the desired variety is grafted thereon," The practicability of doubleworking in one operation, thus saving a year, is not mentioned.

The importance of the recognition of diseases in young trees and their exclusion or disinfection receives due attention, special, detailed treatment being recommended against crown gall. Details are given of raising rootstocks from seed, overwintering and protection of nursery stock, and preparation for planting. The first steps in the production of the modified central leader tree are described. Various planting plans are discussed. The use of growth substances in propagating and improving crotch-angles of trees is reviewed. The bulletin ends with advice on protection of trees against rodents by means of poisons, repellent paints and protectors made of one-fourth-inch mesh hardware cloth. — E. L. Overholser and others in popular Bulletin, Washington Agric. Experiment Station.

Breaking the "Rest Period" of Deciduous Trees.

At the Horticultural Research Station, Nelspruit, dormancy of Peaches Plums and certain other trees not specified has been broken by injecting the branches with a 2½ per cent. solution of sodium thiosulphate in acid medium. Flower and leaf bud emergence began four to six weeks after treatment. The untreated control branches remained dormant. The fruit on the injected branches ripened far in advance of the fruit on untreated branches. The differences are photographically illustrated. Discussion of any possible practical application is for the moment withheld. — H. T. Kriel, "Farming," S. Africa.

The Effect of Pruning Upon the Root Distribution of Peach Trees.

The greater amount of dry matter in the above ground portion of lightly pruned Peach trees in Georgia was reflected in the much greater total length and extent of distribution of roots. Pruning of young Peaches in Georgia has undoubtedly been too severe and has reduced yields even after the pruning has been moderated. Most of the roots were found within the top 18 inches of the soil, which may explain the detrimental effects of some cover crops or of even slightly eroded soil. —E. F. Savage and F. F. Cowart, Proceedings Amer. Soc. Hort. Sci.

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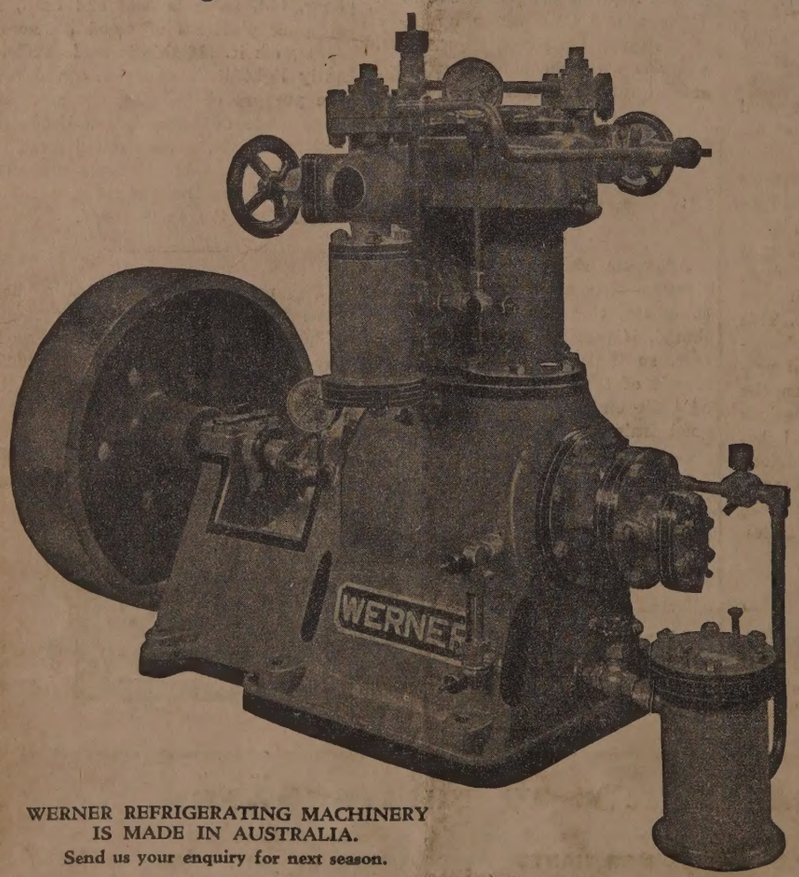

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THE PIG PEN

The Management of Pigs

Breeding and Feeding.

IN a paper read to farmers at South Kilkerran, S.A., Mr. J. C. Scott-Todd recently discussed the management of pigs as reported in the South Australian Journal of Agriculture.

A great deal of success or non-success in pig keeping is due to attention to details or the want of it; it is a sideline which cannot be made by lax or irregular attention. It is a recognised fact that pigs are one of, if not the best, sidelines on the average farm. Especially so in view of the small amount of capital involved in the purchase of foundation stock and the very small outlay required for the housing of the animals.

Farmers who have tried pig raising without profitable results are prone to condemn the business rather than condemn their own want of, perhaps, experience, patience, and attention to details.

In a number of cases, the setbacks that pig men have received were due principally to the tendency, when pigs were bringing good prices, to rush in and buy young stock at prohibitive prices, feed them up without considering any details in respect to cost, and then be unfortunate enough to sell in a glutted market.

Breeding: This very unfortunate happening can to a great degree be avoided by the farmer breeding his own stock in a number that is in keeping with his ability to hold them, rather than sacrifice them on a flat market, or on account of scarcity of feed.

To be able to carry out the breeding of one's own pigs, not less than four sows should be kept; and whatever breed one fancies, trueness to type will pay every time.

Of course, a number of farmers do not feel disposed to pay high prices for brood sows, and consequently they use whatever kind and shape is available, not realising that it takes less feed to keep a good animal than it does to tolerate a mongrel, and in addition the result of mongrel-breeding is apparent in the uneven litters, weakling pigs, rainbow colors, and continued bad doers. If, however, one is prepared to breed with any sows available, it is possible to counteract the ill-effects to a great degree by using a good boar. With a good sire, proper attention to culling, and a determination to avoid in-breeding, one can ultimately produce litters that will show adequate returns and a great saving in the feed bill.

A great diversity of opinion is held in regard to the proper age at which to mate maiden sows; but the greatest mistake that one can make is to breed from sows at immature ages.

Well kept young sows may show signs of heat at about 3 to 4 months, but every care should be taken not to breed at that age, for no good results will be obtained. It has been found repeatedly, that this practice has led to the birth of small, weak litters, which in most cases are not worth the time wasted; and the bodily strain on the young sow has been apparent in the subsequent litters.

On the other hand, one can breed with sows that are too old, in that they are inclined to be less tolerant mothers, and are not such good doers as younger sows. Therefore a maiden sow that litters about 10 to 14 months old will assuredly give the most satisfactory results.

After the birth of the litter, and after details of the disposing of afterbirth, etc., have been carried out, the sow should be disturbed as little as possible.

The young pigs can be satisfied with their mother's milk for three weeks; then arrangements should be made, so that a weak mixture of pollard and milk can be fed to them without interference from the sow, but on no account should the young pigs be overfed, as they are easily upset, and every setback they receive at this age has a serious check on their development.

At about four to five weeks castrate the pigs so as to give them at least two weeks on the mother before weaning, for the check on them is not so great as when they are operated on and straight away deprived of their natural food.

In regard to the boar, procure as good a boar as is possible, and on no account breed from him under six to eight months old. From that age onward he is full of vitality and can be safely used up to the age of four years, when he should be displaced; for from that age he will become sluggish and at times inclined to be savage.

Breeds: The question of the best breeds to keep and the system of marketing is a matter that the individual farmer must study to make possible the best results.

The Duroc sow crossed with a good Berkshire boar will produce good litters and pigs that are saleable at any time. There are possibly other breeds that may prove to be of equal commercial value, and here again the pig raiser should keep in touch with the study the prices obtained at the local markets.

Marketing: Taking into considera- the requirements of buyers and the most advantageous sales for the seller, with weaners at from 18/- to 22/- per head a good sow will return from £12 to £15 per year, which, with the initial costs, time, and handling, is the most profitable manner in which to dispose of one's surplus young pigs. If, however, it is desired to hold with the object of fattening, the best policy is to hold until about seven months, when under proper conditions one should have prime young baconers of around 200 lbs., which would give a dressed carcase of 150 lbs. to 160 lbs. This class of pig invariably brings good prices, and in comparison to heavier pigs the profit will be greater, when one takes into consideration the time, attention and food consumed by holding them for a longer period.

Feeding: Cracked grain, soaked, is one of our best foods; the short period required for soaking will not have the tendency to sour the food, as is likely with the time necessary to soak whole grain.